

Numerical Table of Complex Permittivities for the Williams-Watts Type of Dielectric Relaxation

Naokazu KOIZUMI and Yasuo KITA*

Received July 6, 1978

Numerical values of normalized complex permittivities for the Williams-Watts type of relaxation have been tabulated in the ranges of the logarithm of reduced frequency, $\log \omega\tau$, of -3.0 to 3.0 with increments of 0.1 and of the distribution parameter β of 1.0 to 0.3 with increments of 0.01 .

Complex permittivities and reduced frequencies at dielectric loss maxima are also shown with respective values of β since the loss maximum takes place at a different frequency from the reciprocal of relaxation time except for $\beta=1$.

All numerical values are given in floating numbers with six significant digits.

Williams and Watts proposed an empirical formula for dielectric relaxation,¹⁾ which was found to hold for several cases of dielectric relaxation in polymeric solids,¹⁾ supercooled liquids,²⁾ and inorganic glasses.³⁾ Shore and Zwanzing⁴⁾ suggested that the decay function of the rotational diffusion in a one-dimensional model is quite similar to the function derived by Williams and Watts.

Compilation of numerical values of real and imaginary parts of permittivities in this particular type of relaxation would be worthwhile for analysis of relaxation processes, since one has to make elaborate numerical calculations of infinite series to express the complex permittivity as a function of frequency.

The decay function $\phi(t)$ for the Williams-Watts relaxation is given by

$$\phi(t) = \exp(-t/\tau)^\beta \quad (1)$$

where t is time, τ the relaxation time, and β the distribution parameter of relaxation times, $0 < \beta \leq 1$. The decay function is transformed into the complex permittivity ϵ^* in the frequency domain as⁵⁾

$$\left. \begin{aligned} \epsilon &\equiv \frac{\epsilon^* - \epsilon_\infty}{\epsilon_0 - \epsilon_\infty} = \sum_{n=1}^{\infty} (-1)^{n-1} A_n \exp(-n\beta\pi i/2) \\ A_n &= X^{-n\beta} \frac{\Gamma(n\beta+1)}{\Gamma(n+1)}; X = \omega\tau \end{aligned} \right\} \quad (2)$$

where ϵ^* is the normalized complex permittivity, ϵ_0 and ϵ_∞ are the equilibrium and instantaneous permittivities, respectively, ω the angular frequency, Γ the gamma function, and X the reduced frequency. The convergence of the series of Eq. (2) can be proved easily by using the Stirling formula for gamma function for $0 < \beta < 1$.

* 小泉直一, 喜多保夫: Laboratory of Dielectrics, Institute for Chemical Research, Kyoto University, Uji, Kyoto.

Eq. (2) can be rewritten in the asymptotic form for $X \ll 1$

$$\left. \begin{aligned} \varepsilon \equiv \frac{\varepsilon^* - \varepsilon_\infty}{\varepsilon_0 - \varepsilon_\infty} &\simeq \sum_n (-1)^{n-1} B_n \exp \{ (n-1)\pi i/2 \} \\ B_n &= \frac{X^{n-1}}{\Gamma(n)} \Gamma\left(\frac{n+\beta-1}{\beta}\right) \end{aligned} \right\} \quad (3)$$

Numerical calculations of the normalized permittivity using Eq. (2) are feasible for all values of β when $X > 1$. The coefficient in the n th term A_n of Eq. (2) decreases monotonously to zero as n increases and the series absolutely converges. The error resulting from the summation of finite terms can be estimated by the magnitude of the final coefficient A_n .

When $X \leq 1$, however, care must be taken in calculations. The value of A_n increases with increasing n up to a certain value of n , N , and then decreases monotonously for n greater than N . The series (2) converges only when infinite significant digits are retained in calculations over the whole ranges of X and β except for $\beta=1$ and $X \leq 1$. The error can be estimated by the magnitude of the final coefficient A_n if the number of significant digits is large enough to make the magnitude of the least significant digit of maximum coefficient A_N smaller than that of the final coefficient A_n . The value of A_N includes the numerical error $A_N \times 10^{-L}$ where L is the number of the significant digits. For example, in the case of $\beta=0.6$ and $X=10^{-1}$ 15th A_n

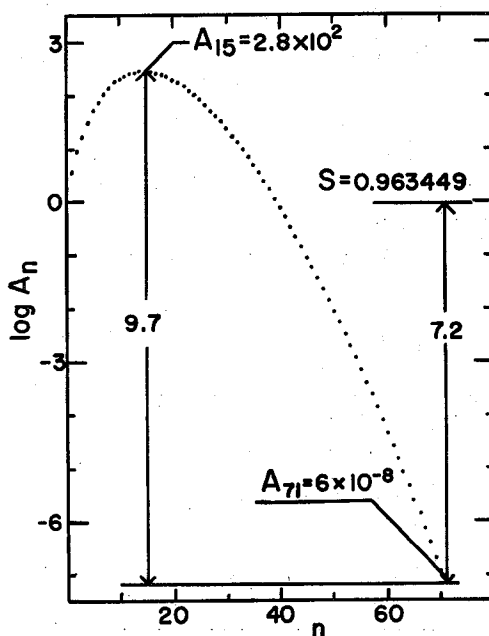


Fig. 1. Variation of $\log A_n$ with n in the case of $\beta=0.6$ and $X=0.1$. S is the sum of 71 terms by Eq.(2) in text, which includes two kinds of errors: one is estimated as 6×10^{-8} from the magnitude of the final coefficient A_{71} and the other due to the magnitude of the least significant digit of the maximum coefficient A_{15} . The 9.7 significant digits are required to reduce the error due to the least significant digit of A_{15} below the magnitude of the final coefficient A_{71} of 6×10^{-8} . Significant digits of the sum S is 7.2, the relative error to S being $6 \times 10^{-8}/0.963449 \simeq 10^{-7}$,² if no rounding error is involved.

is the maximum value of 2.8×10^2 , 71th A_n is 6×10^{-8} , and the sum of 71 terms is 0.963449. The variation of logarithm of A_n with n is shown in Fig. 1, where logarithm of the sum of 71 terms is also shown. If ten significant digits are retained in calculations, the error can be estimated as 6×10^{-8} the value of the final coefficient A_{71} since the error of $A_{15} \times 10^{-10}$ ($=2.8 \times 10^{-8}$) is smaller than the value of A_{71} . Significant digits of the sum are about seven since the relative error to the sum is 1×10^{-7} , that is, $A_{71}/S \approx 6 \times 10^{-8}/0.963449 \approx 1 \times 10^{-7}$. When $A_N > 10^{10} \times \epsilon$, an accuracy of six significant digits could no longer be obtained in calculations by Eq. (2) by use of the computer with 16.8 significant digits employed in this work. For example, the value of A_N is larger than 6.5×10^{74} , the value of 300th A_n , in the case of $\beta=0.6$ and $X=10^{-2}$. The permittivity could be calculated only by a computer which can handle 75 or more significant digits in computations. The values of A_N were picked up in individual cases of β and X to examine the region in which the calculation by Eq. (2) is feasible.

The asymptotic expansion (3) may be useful in calculations for the case of $X \ll 1$. The coefficient B_n in Eq. (3) decreases down to a certain value with increasing n up to N and then increases monotonously for n greater than N . The number of terms in summation of the asymptotic expansion (3) should be optimized by considering the value of N . It should be noted that the summation of Eq. (3) with n greater than N gives larger errors. If the value of B_N is smaller than the error ($1 \times 10^{-6} \times \epsilon$) specified in this computation, Eq. (3) gives fairly good results. The error is estimated by the magnitude of final coefficient B_n in the summation. For example, the fifth coefficient B_n is 5×10^{-9} and the permittivity calculated with five terms is 0.999538 when $\beta=0.6$ and $X=10^{-2}$. The summation with five terms gives a sufficient accuracy since the error relative to the permittivity $5 \times 10^{-9}/0.999538$ is less than 10^{-6} . The values of B_N and N were found out in all combinations of β and X to examine the region where Eq. (3) is feasible in calculations.

It was found that Eqs. (2) and (3) are applicable in the ranges of $\log X > P(\beta)$ and $\log X \leq P(\beta)$, respectively. $P(\beta)$ is given by the following power series in β

$$P(\beta) = C_1 + C_2\beta + C_3\beta^2 + \cdots + C_{19}\beta^{18} + C_{20}\beta^{19} \quad (4)$$

where $C_1, C_2, \dots$, and C_{20} are -22.30187445710650 , 180.8134264044700 , -865.1008261009554 , 2656.685254499909 , -5059.296975392879 , 5154.694507824305 , -773.12254176522580 , -4179.3384477670930 , 5112.0541872138460 , -5896.2194760236730 , 9008.0757255987520 , -6881.4669441995700 , -276.96794606730420 , -269.63234744436750 , 9180.0316147837080 , -11373.920439275910 , 1777.0109481424310 , 6780.4748518016580 , -5739.9267649386690 , and 1487.4538161452860 , respectively.

All summations were carried out by the tournament method⁵⁾ to reduce errors due to rounding. Rounding errors were eliminated by using two extra digits. Real and imaginary parts of normalized permittivities, ϵ' and ϵ'' , are given in the Table I in the ranges of the logarithm of reduced frequency $\log X$ of -0.3 to 3.0 with increment of 0.1 and of β of 1.0 to 0.3 with the increment of 0.01 . Permittivities and reduced frequencies X_M at dielectric loss maxima are also given. Logarithms of X_M are shown in the parenthesis. Numerical values of $\log X_M$ and complex permit-

tivities except for the case of $X=X_M$ are given in floating point numbers. For example a number such as 0.987654×10^6 is written in the form 0.987654D+06. All computations were carried out with a Facom 230-48 computer in the Institute for Chemical Research, Kyoto University.

Numerical values of complex permittivities for $\beta \leq 0.28$ are available on request.

REFERENCES

- (1) G. Williams and D. C. Watts, *Trans. Faraday Soc.*, **66**, 80 (1970).
- (2) G. Williams and P. J. Hains, *Faraday Sym. Chem. Soc.*, **6**, 14 (1972).
- (3) C. T. Moynihan, L. P. Boesch, and N. L. Laberge, *Phys. Chem. Glasses*, **14**, 1222 (1973).
- (4) J. E. Shore and R. Zwanzing, *J. Chem. Phys.*, **63**, 5445 (1975).
- (5) G. Williams, D. C. Watts, S. B. Dev, and A. M. North, *Trans. Faraday Soc.*, **67**, 1323 (1971).
- (6) M. A. Malcolm, *Communications of the Association for Computing Machinery*, **14**, 731 (1971).

Table I. Real and Imaginary Parts of Normalized Complex Permittivities for the Williams-Watts Type of Relaxation

log X	$\beta=1.00$ $X_M=1.000000$ (ϵ' ϵ'')		$\beta=0.99$ $X_M=0.994236$ (-0.251033D-02)	
	ϵ'	ϵ''	ϵ'	ϵ''
	0.500000	0.500000	0.502493	0.496059
-3.0	0.999999D+00	0.999999D-03	0.999999D+00	0.100431D-02
-2.9	0.999998D+00	0.125892D-02	0.999999D+00	0.126435D-02
-2.8	0.999997D+00	0.158489D-02	0.999997D+00	0.159172D-02
-2.7	0.999996D+00	0.199525D-02	0.999996D+00	0.200386D-02
-2.6	0.999994D+00	0.251187D-02	0.999994D+00	0.252270D-02
-2.5	0.999990D+00	0.316225D-02	0.999990D+00	0.317588D-02
-2.4	0.999984D+00	0.398101D-02	0.999984D+00	0.399818D-02
-2.3	0.999975D+00	0.501175D-02	0.999974D+00	0.503336D-02
-2.2	0.999960D+00	0.630932D-02	0.999959D+00	0.633652D-02
-2.1	0.999937D+00	0.794278D-02	0.999936D+00	0.797702D-02
-2.0	0.999900D+00	0.999900D-02	0.999898D+00	0.100421D-01
-1.9	0.999842D+00	0.125873D-01	0.999839D+00	0.126415D-01
-1.8	0.999749D+00	0.158450D-01	0.999744D+00	0.159131D-01
-1.7	0.999602D+00	0.199447D-01	0.999595D+00	0.200304D-01
-1.6	0.999369D+00	0.251030D-01	0.999358D+00	0.252107D-01
-1.5	0.999001D+00	0.315912D-01	0.998982D+00	0.317263D-01
-1.4	0.998418D+00	0.397477D-01	0.998388D+00	0.399170D-01
-1.3	0.997494D+00	0.499931D-01	0.997447D+00	0.502044D-01
-1.2	0.996035D+00	0.628455D-01	0.995960D+00	0.631080D-01
-1.1	0.993730D+00	0.789348D-01	0.993613D+00	0.792581D-01
-1.0	0.990099D+00	0.990099D-01	0.989916D+00	0.994031D-01
-0.9	0.984398D+00	0.123928D+00	0.984114D+00	0.124396D+00
-0.8	0.975497D+00	0.154606D+00	0.975060D+00	0.155143D+00
-0.7	0.961713D+00	0.191887D+00	0.961054D+00	0.192465D+00
-0.6	0.940649D+00	0.236280D+00	0.939680D+00	0.236828D+00
-0.5	0.909091D+00	0.287480D+00	0.907726D+00	0.287856D+00
-0.4	0.863193D+00	0.343643D+00	0.861396D+00	0.343610D+00
-0.3	0.799240D+00	0.400569D+00	0.797107D+00	0.399800D+00
-0.2	0.715253D+00	0.451294D+00	0.713110D+00	0.449464D+00
-0.1	0.613137D+00	0.487032D+00	0.611560D+00	0.484010D+00
0.0	0.500000D+00	0.500000D+00	0.499640D+00	0.496051D+00
0.1	0.386863D+00	0.487032D+00	0.388123D+00	0.482814D+00
0.2	0.284747D+00	0.451294D+00	0.287555D+00	0.447587D+00
0.3	0.200760D+00	0.400569D+00	0.204637D+00	0.397926D+00
0.4	0.136807D+00	0.343643D+00	0.141137D+00	0.342245D+00
0.5	0.909091D-01	0.287480D+00	0.951758D-01	0.287199D+00
0.6	0.593509D-01	0.236280D+00	0.632309D-01	0.236844D+00
0.7	0.382865D-01	0.191887D+00	0.416340D-01	0.193002D+00
0.8	0.245034D-01	0.154606D+00	0.272933D-01	0.156025D+00
0.9	0.156017D-01	0.123928D+00	0.178748D-01	0.125470D+00
1.0	0.990099D-02	0.990099D-01	0.117263D-01	0.100551D+00
1.1	0.627001D-02	0.789348D-01	0.772226D-02	0.804002D-01
1.2	0.396529D-02	0.628455D-01	0.511432D-02	0.641937D-01
1.3	0.250559D-02	0.499931D-01	0.341187D-02	0.512051D-01
1.4	0.158239D-02	0.397477D-01	0.229612D-02	0.408191D-01
1.5	0.999001D-03	0.315912D-01	0.156083D-02	0.325263D-01
1.6	0.630559D-03	0.251030D-01	0.107291D-02	0.259113D-01
1.7	0.397949D-03	0.199447D-01	0.746448D-03	0.206379D-01
1.8	0.251126D-03	0.158450D-01	0.525915D-03	0.164357D-01
1.9	0.158464D-03	0.125873D-01	0.375338D-03	0.130880D-01
2.0	0.999900D-04	0.999900D-02	0.271322D-03	0.104217D-01
2.1	0.630918D-04	0.794278D-02	0.198573D-03	0.829818D-02
2.2	0.398091D-04	0.630932D-02	0.147037D-03	0.660719D-02
2.3	0.251182D-04	0.501175D-02	0.110053D-03	0.526068D-02
2.4	0.158487D-04	0.398101D-02	0.831747D-04	0.418852D-02
2.5	0.999990D-05	0.316225D-02	0.634024D-04	0.333484D-02
2.6	0.630953D-05	0.251187D-02	0.486921D-04	0.265513D-02
2.7	0.398106D-05	0.199525D-02	0.376343D-04	0.211395D-02
2.8	0.251188D-05	0.158489D-02	0.292451D-04	0.168306D-02
2.9	0.158489D-05	0.125892D-02	0.228287D-04	0.134000D-02
3.0	0.999999D-06	0.999999D-03	0.178869D-04	0.106686D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.98$		$\beta=0.97$	
	$X_M=0.988471 (-0.503600D-02)$		$X_M=0.982706 (-0.757643D-02)$	
	ϵ' 0.504970	ϵ'' 0.492090	ϵ' 0.507432	ϵ'' 0.488093
-3.0	0.999999D+00	0.100880D-02	0.999999D+00	0.101347D-02
-2.9	0.999998D+00	0.127000D-02	0.999998D+00	0.127588D-02
-2.8	0.999997D+00	0.159884D-02	0.999997D+00	0.160624D-02
-2.7	0.999996D+00	0.201281D-02	0.999996D+00	0.202213D-02
-2.6	0.999993D+00	0.253398D-02	0.999993D+00	0.254571D-02
-2.5	0.999990D+00	0.319007D-02	0.999989D+00	0.320484D-02
-2.4	0.999984D+00	0.401604D-02	0.999983D+00	0.403463D-02
-2.3	0.999974D+00	0.505584D-02	0.999973D+00	0.507925D-02
-2.2	0.999959D+00	0.636483D-02	0.999958D+00	0.639429D-02
-2.1	0.999934D+00	0.801265D-02	0.999933D+00	0.804973D-02
-2.0	0.999896D+00	0.100869D-01	0.999894D+00	0.101336D-01
-1.9	0.999835D+00	0.126979D-01	0.999832D+00	0.127566D-01
-1.8	0.999739D+00	0.159841D-01	0.999734D+00	0.160580D-01
-1.7	0.999587D+00	0.201196D-01	0.999578D+00	0.202125D-01
-1.6	0.999345D+00	0.253228D-01	0.999332D+00	0.254395D-01
-1.5	0.998962D+00	0.318669D-01	0.998942D+00	0.320133D-01
-1.4	0.998357D+00	0.400930D-01	0.998324D+00	0.402762D-01
-1.3	0.997398D+00	0.504241D-01	0.997346D+00	0.506527D-01
-1.2	0.995883D+00	0.633808D-01	0.995801D+00	0.636645D-01
-1.1	0.993491D+00	0.795941D-01	0.993362D+00	0.799432D-01
-1.0	0.989725D+00	0.998113D-01	0.989524D+00	0.100235D+00
-0.9	0.983817D+00	0.124882D+00	0.983505D+00	0.125384D+00
-0.8	0.974603D+00	0.155698D+00	0.974125D+00	0.156273D+00
-0.7	0.960365D+00	0.193060D+00	0.959646D+00	0.193672D+00
-0.6	0.938671D+00	0.237387D+00	0.937621D+00	0.237957D+00
-0.5	0.906313D+00	0.288230D+00	0.904848D+00	0.288601D+00
-0.4	0.859546D+00	0.343553D+00	0.857641D+00	0.343472D+00
-0.3	0.794929D+00	0.398982D+00	0.792707D+00	0.398113D+00
-0.2	0.710949D+00	0.447565D+00	0.708771D+00	0.445597D+00
-0.1	0.610000D+00	0.480921D+00	0.608460D+00	0.477765D+00
0.0	0.499322D+00	0.492058D+00	0.499048D+00	0.488023D+00
0.1	0.389425D+00	0.478582D+00	0.390770D+00	0.474336D+00
0.2	0.290387D+00	0.443878D+00	0.293245D+00	0.440168D+00
0.3	0.208524D+00	0.395276D+00	0.212421D+00	0.392618D+00
0.4	0.145476D+00	0.340824D+00	0.149823D+00	0.339380D+00
0.5	0.994616D-01	0.286885D+00	0.103767D+00	0.286538D+00
0.6	0.671447D-01	0.237373D+00	0.710924D-01	0.237866D+00
0.7	0.450280D-01	0.194088D+00	0.484688D-01	0.195144D+00
0.8	0.301376D-01	0.157425D+00	0.330369D-01	0.158805D+00
0.9	0.202055D-01	0.127002D+00	0.225946D-01	0.128525D+00
1.0	0.136084D-01	0.102093D+00	0.155483D-01	0.103634D+00
1.1	0.922802D-02	0.818737D-01	0.107886D-01	0.833545D-01
1.2	0.631216D-02	0.655554D-01	0.756024D-02	0.669302D-01
1.3	0.436166D-02	0.524343D-01	0.535642D-02	0.536804D-01
1.4	0.304798D-02	0.419097D-01	0.383943D-02	0.430196D-01
1.5	0.215567D-02	0.334816D-01	0.278492D-02	0.344572D-01
1.6	0.154357D-02	0.267397D-01	0.204386D-02	0.275885D-01
1.7	0.111905D-02	0.213505D-01	0.151697D-02	0.220831D-01
1.8	0.821110D-03	0.170448D-01	0.113783D-02	0.176728D-01
1.9	0.609417D-03	0.136059D-01	0.861711D-03	0.141414D-01
2.0	0.457106D-03	0.108600D-01	0.658250D-03	0.113145D-01
2.1	0.346160D-03	0.866775D-02	0.506657D-03	0.905197D-02
2.2	0.264378D-03	0.691775D-02	0.392545D-03	0.724147D-02
2.3	0.203420D-03	0.552089D-02	0.305844D-03	0.579285D-02
2.4	0.157518D-03	0.440599D-02	0.239424D-03	0.463386D-02
2.5	0.122634D-03	0.351617D-02	0.188171D-03	0.370666D-02
2.6	0.959102D-04	0.280602D-02	0.148376D-03	0.296493D-02
2.7	0.752930D-04	0.223928D-02	0.117314D-03	0.237159D-02
2.8	0.592919D-04	0.178698D-02	0.929596D-04	0.189696D-02
2.9	0.468106D-04	0.142604D-02	0.737944D-04	0.151731D-02
3.0	0.370336D-04	0.113799D-02	0.586664D-04	0.121363D-02

log X	$\beta=0.96$ $X_M=0.976943 (-0.101309D-01)$		$\beta=0.95$ $X_M=0.971183 (-0.126990D-01)$	
	ε' 0.509877	ε'' 0.484069	ε' 0.512305	ε'' 0.480017
-3.0	0.999999D+00	0.101834D-02	0.999999D+00	0.102340D-02
-2.9	0.999998D+00	0.128201D-02	0.999998D+00	0.128839D-02
-2.8	0.999997D+00	0.161395D-02	0.999997D+00	0.162198D-02
-2.7	0.999996D+00	0.203184D-02	0.999996D+00	0.204195D-02
-2.6	0.999993D+00	0.255793D-02	0.999993D+00	0.257066D-02
-2.5	0.999989D+00	0.322023D-02	0.999989D+00	0.323625D-02
-2.4	0.999983D+00	0.405400D-02	0.999982D+00	0.407417D-02
-2.3	0.999973D+00	0.510363D-02	0.999972D+00	0.512902D-02
-2.2	0.999957D+00	0.642498D-02	0.999956D+00	0.645694D-02
-2.1	0.999932D+00	0.808835D-02	0.999930D+00	0.812858D-02
-2.0	0.999892D+00	0.101822D-01	0.999890D+00	0.102328D-01
-1.9	0.999829D+00	0.128178D-01	0.999825D+00	0.128815D-01
-1.8	0.999728D+00	0.161349D-01	0.999723D+00	0.162150D-01
-1.7	0.999570D+00	0.203092D-01	0.999561D+00	0.204099D-01
-1.6	0.999318D+00	0.255609D-01	0.999304D+00	0.256874D-01
-1.5	0.998920D+00	0.321656D-01	0.998897D+00	0.323243D-01
-1.4	0.998289D+00	0.404669D-01	0.998253D+00	0.406654D-01
-1.3	0.997292D+00	0.508906D-01	0.997235D+00	0.511382D-01
-1.2	0.995715D+00	0.639596D-01	0.995625D+00	0.642667D-01
-1.1	0.993228D+00	0.803062D-01	0.993086D+00	0.806836D-01
-1.0	0.989313D+00	0.100675D+00	0.989092D+00	0.101132D+00
-0.9	0.983179D+00	0.125906D+00	0.982836D+00	0.126446D+00
-0.8	0.973625D+00	0.156866D+00	0.973102D+00	0.157480D+00
-0.7	0.958896D+00	0.194302D+00	0.958111D+00	0.194950D+00
-0.6	0.936528D+00	0.238537D+00	0.935390D+00	0.239128D+00
-0.5	0.903330D+00	0.288969D+00	0.901757D+00	0.289331D+00
-0.4	0.855680D+00	0.343364D+00	0.853663D+00	0.343226D+00
-0.3	0.790441D+00	0.397190D+00	0.788133D+00	0.396211D+00
-0.2	0.706580D+00	0.443558D+00	0.704375D+00	0.441446D+00
-0.1	0.606941D+00	0.474543D+00	0.605446D+00	0.471253D+00
0.0	0.498818D+00	0.483947D+00	0.498632D+00	0.479831D+00
0.1	0.392156D+00	0.470078D+00	0.393584D+00	0.465807D+00
0.2	0.296127D+00	0.436457D+00	0.299032D+00	0.432744D+00
0.3	0.216327D+00	0.389951D+00	0.220244D+00	0.387275D+00
0.4	0.154180D+00	0.337912D+00	0.158546D+00	0.336421D+00
0.5	0.108092D+00	0.286156D+00	0.112436D+00	0.285740D+00
0.6	0.750745D-01	0.238324D+00	0.790911D-01	0.238744D+00
0.7	0.519567D-01	0.196170D+00	0.554922D-01	0.197163D+00
0.8	0.359919D-01	0.160163D+00	0.390029D-01	0.161499D+00
0.9	0.250429D-01	0.130036D+00	0.275512D-01	0.131536D+00
1.0	0.175473D-01	0.105174D+00	0.196064D-01	0.106711D+00
1.1	0.124053D-01	0.848420D-01	0.140794D-01	0.863356D-01
1.2	0.885999D-02	0.683177D-01	0.102129D-01	0.697174D-01
1.3	0.639765D-02	0.549433D-01	0.748688D-02	0.562227D-01
1.4	0.467195D-02	0.441488D-01	0.554710D-02	0.452970D-01
1.5	0.345002D-02	0.354533D-01	0.415248D-02	0.364698D-01
1.6	0.257514D-02	0.284580D-01	0.313886D-02	0.293483D-01
1.7	0.194150D-02	0.228358D-01	0.239397D-02	0.236090D-01
1.8	0.147726D-02	0.183201D-01	0.184061D-02	0.189870D-01
1.9	0.113329D-02	0.146949D-01	0.142526D-02	0.152668D-01
2.0	0.875708D-03	0.117855D-01	0.111049D-02	0.122737D-01
2.1	0.680918D-03	0.945130D-02	0.869845D-03	0.986626D-02
2.2	0.532293D-03	0.757884D-02	0.684424D-03	0.793034D-02
2.3	0.417992D-03	0.607701D-02	0.540571D-03	0.637385D-02
2.4	0.329477D-03	0.487257D-02	0.428301D-03	0.512258D-02
2.5	0.260523D-03	0.390672D-02	0.340236D-03	0.411678D-02
2.6	0.206533D-03	0.313224D-02	0.270859D-03	0.330836D-02
2.7	0.164081D-03	0.251125D-02	0.216009D-03	0.265862D-02
2.8	0.130580D-03	0.201334D-02	0.172514D-03	0.213644D-02
2.9	0.104067D-03	0.161413D-02	0.137938D-03	0.171680D-02
3.0	0.830314D-04	0.129406D-02	0.110397D-03	0.137956D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.94$ $X_M=0.965429 (-0.152799D-01)$		$\beta=0.93$ $X_M=0.959681 (-0.178729D-01)$	
	ϵ'	ϵ''	ϵ'	ϵ''
	0.514714	0.475938	0.517105	0.471833
-3.0	0.999999D+00	0.102869D-02	0.999999D+00	0.103419D-02
-2.9	0.999998D+00	0.129504D-02	0.999998D+00	0.130197D-02
-2.8	0.999997D+00	0.163035D-02	0.999997D+00	0.163908D-02
-2.7	0.999996D+00	0.205249D-02	0.999995D+00	0.206348D-02
-2.6	0.999993D+00	0.258392D-02	0.999993D+00	0.259775D-02
-2.5	0.999989D+00	0.325295D-02	0.999988D+00	0.327036D-02
-2.4	0.999982D+00	0.409519D-02	0.999982D+00	0.411711D-02
-2.3	0.999972D+00	0.515549D-02	0.999971D+00	0.518307D-02
-2.2	0.999955D+00	0.649025D-02	0.999954D+00	0.652498D-02
-2.1	0.999929D+00	0.817051D-02	0.999927D+00	0.821422D-02
-2.0	0.999887D+00	0.102856D-01	0.999885D+00	0.103406D-01
-1.9	0.999821D+00	0.129478D-01	0.999817D+00	0.130170D-01
-1.8	0.999717D+00	0.162985D-01	0.999710D+00	0.163855D-01
-1.7	0.999551D+00	0.205148D-01	0.999541D+00	0.206242D-01
-1.6	0.999288D+00	0.258192D-01	0.999272D+00	0.259566D-01
-1.5	0.998873D+00	0.324896D-01	0.998848D+00	0.326618D-01
-1.4	0.998215D+00	0.408723D-01	0.998175D+00	0.410878D-01
-1.3	0.997117D+00	0.513961D-01	0.997111D+00	0.516647D-01
-1.2	0.995530D+00	0.645863D-01	0.995431D+00	0.649191D-01
-1.1	0.992937D+00	0.810762D-01	0.992781D+00	0.814846D-01
-1.0	0.988860D+00	0.101607D+00	0.988616D+00	0.102101D+00
-0.9	0.982477D+00	0.127007D+00	0.982099D+00	0.127588D+00
-0.8	0.972553D+00	0.158114D+00	0.971978D+00	0.158770D+00
-0.7	0.957291D+00	0.195615D+00	0.956434D+00	0.196299D+00
-0.6	0.934204D+00	0.239728D+00	0.932968D+00	0.240337D+00
-0.5	0.900127D+00	0.289685D+00	0.898438D+00	0.290030D+00
-0.4	0.851588D+00	0.343056D+00	0.849454D+00	0.342851D+00
-0.3	0.785782D+00	0.395173D+00	0.783390D+00	0.394073D+00
-0.2	0.702161D+00	0.439259D+00	0.699939D+00	0.436997D+00
-0.1	0.603977D+00	0.467898D+00	0.602536D+00	0.464477D+00
0.0	0.498492D+00	0.475676D+00	0.498399D+00	0.471484D+00
0.1	0.395052D+00	0.461524D+00	0.396561D+00	0.457231D+00
0.2	0.301959D+00	0.429029D+00	0.304909D+00	0.425312D+00
0.3	0.224170D+00	0.384588D+00	0.228105D+00	0.381890D+00
0.4	0.162922D+00	0.334904D+00	0.167307D+00	0.333363D+00
0.5	0.116801D+00	0.285289D+00	0.121186D+00	0.284802D+00
0.6	0.831425D-01	0.239128D+00	0.872289D-01	0.239473D+00
0.7	0.590756D-01	0.198125D+00	0.627071D-01	0.199053D+00
0.8	0.420707D-01	0.162811D+00	0.451958D-01	0.164100D+00
0.9	0.301205D-01	0.133023D+00	0.327516D-01	0.134496D+00
1.0	0.217268D-01	0.108246D+00	0.239095D-01	0.109777D+00
1.1	0.158124D-01	0.878345D-01	0.176055D-01	0.893380D-01
1.2	0.116204D-01	0.711288D-01	0.130840D-01	0.725514D-01
1.3	0.862568D-02	0.575182D-01	0.981566D-02	0.588296D-01
1.4	0.646645D-02	0.464643D-01	0.743164D-02	0.476505D-01
1.5	0.489385D-02	0.375068D-01	0.567574D-02	0.385645D-01
1.6	0.373648D-02	0.302597D-01	0.436955D-02	0.311923D-01
1.7	0.287576D-02	0.244030D-01	0.338833D-02	0.252181D-01
1.8	0.222917D-02	0.196739D-01	0.264429D-02	0.203812D-01
1.9	0.173880D-02	0.158576D-01	0.207515D-02	0.164678D-01
2.0	0.136366D-02	0.127794D-01	0.163633D-02	0.133032D-01
2.1	0.107439D-02	0.102973D-01	0.129557D-02	0.107450D-01
2.2	0.849789D-03	0.829648D-02	0.102929D-02	0.867776D-02
2.3	0.674337D-03	0.668387D-02	0.820092D-03	0.700757D-02
2.4	0.536562D-03	0.538436D-02	0.654971D-03	0.565841D-02
2.5	0.427895D-03	0.433730D-02	0.524127D-03	0.456874D-02
2.6	0.341865D-03	0.349371D-02	0.420102D-03	0.368874D-02
2.7	0.273545D-03	0.281411D-02	0.337170D-03	0.297813D-02
2.8	0.219148D-03	0.226665D-02	0.270904D-03	0.240434D-02
2.9	0.175745D-03	0.182566D-02	0.217854D-03	0.194105D-02
3.0	0.141054D-03	0.147044D-02	0.175319D-03	0.156701D-02

log X	$\beta=0.92$		$\beta=0.91$	
	$X_M=0.953943 (-0.204776D-01)$		$X_M=0.948215 (-0.230932D-01)$	
	ϵ' 0.519476	ϵ'' 0.467700	ϵ' 0.521826	ϵ'' 0.463542
-3.0	0.999999D+00	0.103993D-02	0.999999D+00	0.104593D-02
-2.9	0.999998D+00	0.130920D-02	0.999998D+00	0.131674D-02
-2.8	0.999997D+00	0.164818D-02	0.999997D+00	0.165768D-02
-2.7	0.999995D+00	0.207493D-02	0.999995D+00	0.208689D-02
-2.6	0.999993D+00	0.261218D-02	0.999992D+00	0.262723D-02
-2.5	0.999988D+00	0.328852D-02	0.999988D+00	0.330747D-02
-2.4	0.999981D+00	0.413997D-02	0.999981D+00	0.416382D-02
-2.3	0.999970D+00	0.521185D-02	0.999970D+00	0.524187D-02
-2.2	0.999953D+00	0.656120D-02	0.999952D+00	0.659899D-02
-2.1	0.999925D+00	0.825980D-02	0.999924D+00	0.830737D-02
-2.0	0.999882D+00	0.103980D-01	0.999879D+00	0.104578D-01
-1.9	0.999813D+00	0.130892D-01	0.999808D+00	0.131645D-01
-1.8	0.999703D+00	0.164763D-01	0.999696D+00	0.165710D-01
-1.7	0.999530D+00	0.207383D-01	0.999519D+00	0.208573D-01
-1.6	0.999256D+00	0.260998D-01	0.999238D+00	0.262493D-01
-1.5	0.998821D+00	0.328414D-01	0.998793D+00	0.330288D-01
-1.4	0.998133D+00	0.413124D-01	0.998088D+00	0.415467D-01
-1.3	0.997044D+00	0.519446D-01	0.996974D+00	0.522364D-01
-1.2	0.995325D+00	0.652657D-01	0.995215D+00	0.656269D-01
-1.1	0.992616D+00	0.819096D-01	0.992442D+00	0.823520D-01
-1.0	0.988359D+00	0.102614D+00	0.988088D+00	0.103147D+00
-0.9	0.981702D+00	0.128191D+00	0.981285D+00	0.128816D+00
-0.8	0.971374D+00	0.159447D+00	0.970740D+00	0.160146D+00
-0.7	0.955536D+00	0.197001D+00	0.954597D+00	0.197721D+00
-0.6	0.931681D+00	0.240954D+00	0.930339D+00	0.241577D+00
-0.5	0.896688D+00	0.290365D+00	0.894876D+00	0.290685D+00
-0.4	0.847262D+00	0.342607D+00	0.845010D+00	0.342323D+00
-0.3	0.780958D+00	0.392908D+00	0.778487D+00	0.391676D+00
-0.2	0.697712D+00	0.434658D+00	0.695481D+00	0.432241D+00
-0.1	0.601125D+00	0.460991D+00	0.599745D+00	0.457441D+00
0.0	0.498352D+00	0.467257D+00	0.498352D+00	0.462995D+00
0.1	0.398109D+00	0.452928D+00	0.399696D+00	0.448615D+00
0.2	0.307881D+00	0.421592D+00	0.310873D+00	0.417870D+00
0.3	0.232050D+00	0.379181D+00	0.236003D+00	0.376460D+00
0.4	0.171702D+00	0.331795D+00	0.176107D+00	0.330201D+00
0.5	0.125592D+00	0.284279D+00	0.130018D+00	0.283719D+00
0.6	0.913505D-01	0.239780D+00	0.955077D-01	0.240048D+00
0.7	0.663872D-01	0.199947D+00	0.701163D-01	0.200807D+00
0.8	0.483787D-01	0.165363D+00	0.516201D-01	0.166600D+00
0.9	0.354453D-01	0.135955D+00	0.382025D-01	0.137397D+00
1.0	0.261557D-01	0.111304D+00	0.284667D-01	0.112824D+00
1.1	0.194601D-01	0.908454D-01	0.213778D-01	0.923557D-01
1.2	0.146054D-01	0.739844D-01	0.161861D-01	0.754274D-01
1.3	0.110585D-01	0.601564D-01	0.123558D-01	0.614982D-01
1.4	0.844434D-02	0.488553D-01	0.950629D-02	0.500787D-01
1.5	0.649979D-02	0.396427D-01	0.736772D-02	0.407415D-01
1.6	0.503966D-02	0.321463D-01	0.574847D-02	0.331219D-01
1.7	0.393318D-02	0.260546D-01	0.451189D-02	0.269128D-01
1.8	0.308737D-02	0.211094D-01	0.355989D-02	0.218587D-01
1.9	0.243560D-02	0.170978D-01	0.282151D-02	0.177481D-01
2.0	0.192969D-02	0.138455D-01	0.224497D-02	0.144069D-01
2.1	0.153444D-02	0.112099D-01	0.179213D-02	0.116924D-01
2.2	0.122389D-02	0.907472D-02	0.143459D-02	0.948790D-02
2.3	0.978693D-03	0.734547D-02	0.115105D-02	0.769811D-02
2.4	0.784287D-03	0.594523D-02	0.925320D-03	0.624534D-02
2.5	0.629604D-03	0.481158D-02	0.745043D-03	0.506634D-02
2.6	0.506160D-03	0.389389D-02	0.600676D-03	0.410966D-02
2.7	0.407404D-03	0.315109D-02	0.484805D-03	0.333346D-02
2.8	0.328235D-03	0.254990D-02	0.391632D-03	0.270376D-02
2.9	0.264661D-03	0.206335D-02	0.316594D-03	0.219294D-02
3.0	0.213538D-03	0.166961D-02	0.256085D-03	0.177858D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.90$		$\beta=0.89$	
	$X_M=0.942499 (-0.257190D-01)$		$X_M=0.936797 (-0.283545D-01)$	
	ϵ'	ϵ''	ϵ'	ϵ''
	0.524156	0.459357	0.526465	0.455147
-3.0	0.999999D+00	0.105218D-02	0.999999D+00	0.105872D-02
-2.9	0.999998D+00	0.132462D-02	0.999998D+00	0.133284D-02
-2.8	0.999997D+00	0.166759D-02	0.999997D+00	0.167795D-02
-2.7	0.999995D+00	0.209937D-02	0.999995D+00	0.211240D-02
-2.6	0.999992D+00	0.264294D-02	0.999992D+00	0.265935D-02
-2.5	0.999988D+00	0.332725D-02	0.999987D+00	0.334791D-02
-2.4	0.999980D+00	0.418872D-02	0.999980D+00	0.421473D-02
-2.3	0.999969D+00	0.527322D-02	0.999968D+00	0.530595D-02
-2.2	0.999951D+00	0.663844D-02	0.999949D+00	0.667964D-02
-2.1	0.999922D+00	0.835702D-02	0.999920D+00	0.840887D-02
-2.0	0.999876D+00	0.105203D-01	0.999873D+00	0.105855D-01
-1.9	0.999804D+00	0.132431D-01	0.999799D+00	0.133252D-01
-1.8	0.999689D+00	0.166698D-01	0.999681D+00	0.167731D-01
-1.7	0.999507D+00	0.209816D-01	0.999494D+00	0.211113D-01
-1.6	0.999219D+00	0.264052D-01	0.999199D+00	0.265681D-01
-1.5	0.998763D+00	0.332242D-01	0.998731D+00	0.334283D-01
-1.4	0.998041D+00	0.417911D-01	0.997991D+00	0.420461D-01
-1.3	0.996900D+00	0.525406D-01	0.996821D+00	0.528581D-01
-1.2	0.995098D+00	0.660032D-01	0.994974D+00	0.663956D-01
-1.1	0.992259D+00	0.828127D-01	0.992066D+00	0.832924D-01
-1.0	0.987803D+00	0.103701D+00	0.987502D+00	0.104277D+00
-0.9	0.980846D+00	0.129464D+00	0.980383D+00	0.130136D+00
-0.8	0.970074D+00	0.160869D+00	0.969375D+00	0.161614D+00
-0.7	0.953613D+00	0.198459D+00	0.952583D+00	0.199214D+00
-0.6	0.928941D+00	0.242207D+00	0.927483D+00	0.242840D+00
-0.5	0.892999D+00	0.290990D+00	0.891055D+00	0.291277D+00
-0.4	0.842698D+00	0.341994D+00	0.840325D+00	0.341617D+00
-0.3	0.775980D+00	0.390373D+00	0.773436D+00	0.388998D+00
-0.2	0.693251D+00	0.429745D+00	0.691023D+00	0.427170D+00
-0.1	0.598400D+00	0.453828D+00	0.597089D+00	0.450153D+00
0.0	0.498399D+00	0.458700D+00	0.498493D+00	0.454373D+00
0.1	0.401321D+00	0.444293D+00	0.402983D+00	0.439963D+00
0.2	0.313886D+00	0.414144D+00	0.316919D+00	0.410414D+00
0.3	0.239966D+00	0.373725D+00	0.243938D+00	0.370978D+00
0.4	0.180522D+00	0.328579D+00	0.184947D+00	0.326930D+00
0.5	0.134466D+00	0.283122D+00	0.138935D+00	0.282487D+00
0.6	0.997005D-01	0.240275D+00	0.103929D+00	0.240463D+00
0.7	0.738945D-01	0.201631D+00	0.777224D-01	0.202418D+00
0.8	0.549205D-01	0.167811D+00	0.582804D-01	0.168993D+00
0.9	0.410241D-01	0.138823D+00	0.439109D-01	0.140231D+00
1.0	0.308435D-01	0.114338D+00	0.332873D-01	0.115844D+00
1.1	0.233597D-01	0.938682D-01	0.254076D-01	0.953819D-01
1.2	0.178277D-01	0.768797D-01	0.195318D-01	0.783405D-01
1.3	0.137094D-01	0.628547D-01	0.151210D-01	0.642252D-01
1.4	0.106193D-01	0.513203D-01	0.117851D-01	0.525800D-01
1.5	0.828130D-02	0.418609D-01	0.924236D-02	0.430007D-01
1.6	0.649770D-02	0.341192D-01	0.728913D-02	0.351382D-01
1.7	0.512609D-02	0.277930D-01	0.577750D-02	0.286953D-01
1.8	0.406337D-02	0.226296D-01	0.459944D-02	0.234224D-01
1.9	0.323430D-02	0.184190D-01	0.367546D-02	0.191111D-01
2.0	0.258349D-02	0.149878D-01	0.294663D-02	0.155888D-01
2.1	0.206983D-02	0.121931D-01	0.236881D-02	0.127126D-01
2.2	0.166249D-02	0.991783D-02	0.190870D-02	0.103651D-01
2.3	0.133812D-02	0.806603D-02	0.154095D-02	0.844979D-02
2.4	0.107893D-02	0.655927D-02	0.124605D-02	0.688759D-02
2.5	0.871215D-03	0.533352D-02	0.100894D-02	0.561367D-02
2.6	0.704330D-03	0.433652D-02	0.817854D-03	0.457501D-02
2.7	0.569976D-03	0.352570D-02	0.663562D-03	0.372829D-02
2.8	0.461624D-03	0.286635D-02	0.538782D-03	0.303812D-02
2.9	0.374118D-03	0.233022D-02	0.437736D-03	0.247561D-02
3.0	0.303365D-03	0.189431D-02	0.355821D-03	0.201719D-02

log X	$\beta=0.88$		$\beta=0.87$	
	$X_M=0.931110 (-0.309988D-01)$		$X_M=0.925441 (-0.336514D-01)$	
	ϵ' 0.528751	ϵ'' 0.450910	ϵ' 0.531015	ϵ'' 0.446649
-3.0	0.999999D+00	0.106554D-02	0.999999D+00	0.107268D-02
-2.9	0.999998D+00	0.134144D-02	0.999998D+00	0.135042D-02
-2.8	0.999997D+00	0.168877D-02	0.999997D+00	0.170008D-02
-2.7	0.999995D+00	0.212602D-02	0.999995D+00	0.214026D-02
-2.6	0.999992D+00	0.267650D-02	0.999992D+00	0.269442D-02
-2.5	0.999987D+00	0.336949D-02	0.999987D+00	0.339205D-02
-2.4	0.999979D+00	0.424190D-02	0.999979D+00	0.427030D-02
-2.3	0.999967D+00	0.534015D-02	0.999966D+00	0.537591D-02
-2.2	0.999948D+00	0.672269D-02	0.999947D+00	0.676770D-02
-2.1	0.999918D+00	0.846305D-02	0.999915D+00	0.851969D-02
-2.0	0.999870D+00	0.106537D-01	0.999866D+00	0.107250D-01
-1.9	0.999793D+00	0.134110D-01	0.999788D+00	0.135006D-01
-1.8	0.999672D+00	0.168809D-01	0.999664D+00	0.169936D-01
-1.7	0.999481D+00	0.212468D-01	0.999467D+00	0.213884D-01
-1.6	0.999178D+00	0.267382D-01	0.999155D+00	0.269159D-01
-1.5	0.998698D+00	0.336415D-01	0.998662D+00	0.338641D-01
-1.4	0.997938D+00	0.423124D-01	0.997882D+00	0.425906D-01
-1.3	0.996738D+00	0.531894D-01	0.996650D+00	0.535353D-01
-1.2	0.994843D+00	0.668049D-01	0.994705D+00	0.672319D-01
-1.1	0.991861D+00	0.837922D-01	0.991645D+00	0.843131D-01
-1.0	0.987184D+00	0.104876D+00	0.986849D+00	0.105500D+00
-0.9	0.979895D+00	0.130833D+00	0.979380D+00	0.131556D+00
-0.8	0.968639D+00	0.162384D+00	0.967865D+00	0.163178D+00
-0.7	0.951503D+00	0.199988D+00	0.950371D+00	0.200778D+00
-0.6	0.925963D+00	0.243477D+00	0.924378D+00	0.244115D+00
-0.5	0.889044D+00	0.291542D+00	0.886962D+00	0.291783D+00
-0.4	0.837893D+00	0.341190D+00	0.835401D+00	0.340707D+00
-0.3	0.770860D+00	0.387548D+00	0.768252D+00	0.386019D+00
-0.2	0.688800D+00	0.424514D+00	0.686584D+00	0.421779D+00
-0.1	0.595816D+00	0.446417D+00	0.594582D+00	0.442622D+00
0.0	0.498635D+00	0.450015D+00	0.498825D+00	0.445629D+00
0.1	0.404683D+00	0.435624D+00	0.406418D+00	0.431278D+00
0.2	0.319971D+00	0.406681D+00	0.323042D+00	0.402943D+00
0.3	0.247918D+00	0.368216D+00	0.251907D+00	0.365439D+00
0.4	0.189383D+00	0.325253D+00	0.193829D+00	0.323546D+00
0.5	0.143425D+00	0.281813D+00	0.147938D+00	0.281101D+00
0.6	0.108194D+00	0.240609D+00	0.112496D+00	0.240713D+00
0.7	0.816002D-01	0.203169D+00	0.855283D-01	0.203881D+00
0.8	0.617005D-01	0.170146D+00	0.651814D-01	0.171269D+00
0.9	0.468639D-01	0.141621D+00	0.498839D-01	0.142990D+00
1.0	0.357994D-01	0.117342D+00	0.383809D-01	0.118829D+00
1.1	0.275227D-01	0.968959D-01	0.297066D-01	0.984093D-01
1.2	0.213002D-01	0.798091D-01	0.231344D-01	0.812847D-01
1.3	0.165924D-01	0.656093D-01	0.181255D-01	0.670063D-01
1.4	0.130056D-01	0.538572D-01	0.142828D-01	0.551519D-01
1.5	0.102528D-01	0.441609D-01	0.113145D-01	0.453413D-01
1.6	0.812461D-02	0.361791D-01	0.900605D-02	0.372418D-01
1.7	0.646788D-02	0.296201D-01	0.719908D-02	0.305674D-01
1.8	0.516975D-02	0.242375D-01	0.577608D-02	0.250751D-01
1.9	0.414657D-02	0.198248D-01	0.464927D-02	0.205605D-01
2.0	0.333582D-02	0.162103D-01	0.375260D-02	0.168528D-01
2.1	0.269038D-02	0.132513D-01	0.303596D-02	0.138098D-01
2.2	0.217446D-02	0.108302D-01	0.246102D-02	0.113138D-01
2.3	0.176061D-02	0.884998D-02	0.199828D-02	0.926716D-02
2.4	0.142766D-02	0.723086D-02	0.162479D-02	0.758967D-02
2.5	0.115910D-02	0.590733D-02	0.132264D-02	0.621509D-02
2.6	0.942030D-03	0.482564D-02	0.107770D-02	0.508897D-02
2.7	0.766261D-03	0.394174D-02	0.878822D-03	0.416658D-02
2.8	0.623724D-03	0.321956D-02	0.717114D-03	0.341115D-02
2.9	0.507993D-03	0.262957D-02	0.585477D-03	0.279255D-02
3.0	0.413931D-03	0.214761D-02	0.478216D-03	0.228603D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.86$ $X_M=0.919789 (-0.363116D-01)$		$\beta=0.85$ $X_M=0.914158 (-0.389788D-01)$	
	ϵ' 0.533255	ϵ'' 0.442363	ϵ' 0.535473	ϵ'' 0.438051
-3.0	0.999999D+00	0.108014D-02	0.999999D+00	0.108795D-02
-2.9	0.999998D+00	0.135982D-02	0.999998D+00	0.136965D-02
-2.8	0.999997D+00	0.171190D-02	0.999996D+00	0.172428D-02
-2.7	0.999995D+00	0.215515D-02	0.999994D+00	0.217074D-02
-2.6	0.999991D+00	0.271317D-02	0.999991D+00	0.273279D-02
-2.5	0.999986D+00	0.341565D-02	0.999986D+00	0.344035D-02
-2.4	0.999978D+00	0.430001D-02	0.999978D+00	0.433110D-02
-2.3	0.999965D+00	0.541330D-02	0.999964D+00	0.545244D-02
-2.2	0.999945D+00	0.681477D-02	0.999944D+00	0.686403D-02
-2.1	0.999913D+00	0.857893D-02	0.999911D+00	0.864092D-02
-2.0	0.999862D+00	0.107995D-01	0.999858D+00	0.108775D-01
-1.9	0.999782D+00	0.135944D-01	0.999775D+00	0.136925D-01
-1.8	0.999654D+00	0.171115D-01	0.999644D+00	0.172349D-01
-1.7	0.999452D+00	0.215366D-01	0.999436D+00	0.216915D-01
-1.6	0.999132D+00	0.271018D-01	0.999107D+00	0.272962D-01
-1.5	0.998625D+00	0.340970D-01	0.998585D+00	0.343404D-01
-1.4	0.997823D+00	0.428814D-01	0.997760D+00	0.431853D-01
-1.3	0.996556D+00	0.538966D-01	0.996457D+00	0.542742D-01
-1.2	0.994558D+00	0.676775D-01	0.994403D+00	0.681428D-01
-1.1	0.991416D+00	0.848560D-01	0.991173D+00	0.854221D-01
-1.0	0.986494D+00	0.106148D+00	0.986118D+00	0.106823D+00
-0.9	0.978837D+00	0.132305D+00	0.978263D+00	0.133082D+00
-0.8	0.967050D+00	0.163996D+00	0.966191D+00	0.164840D+00
-0.7	0.949184D+00	0.201585D+00	0.947940D+00	0.202407D+00
-0.6	0.922726D+00	0.244752D+00	0.921003D+00	0.245387D+00
-0.5	0.884809D+00	0.291997D+00	0.882583D+00	0.292180D+00
-0.4	0.832849D+00	0.340167D+00	0.830239D+00	0.339564D+00
-0.3	0.765616D+00	0.384410D+00	0.762953D+00	0.382719D+00
-0.2	0.684380D+00	0.418962D+00	0.682188D+00	0.416065D+00
-0.1	0.593388D+00	0.438768D+00	0.592236D+00	0.434857D+00
0.0	0.499062D+00	0.441214D+00	0.499346D+00	0.436773D+00
0.1	0.408189D+00	0.426924D+00	0.409995D+00	0.422563D+00
0.2	0.326130D+00	0.399200D+00	0.329237D+00	0.395452D+00
0.3	0.255905D+00	0.362646D+00	0.259912D+00	0.359838D+00
0.4	0.198287D+00	0.321810D+00	0.202755D+00	0.320043D+00
0.5	0.152472D+00	0.280349D+00	0.157028D+00	0.279556D+00
0.6	0.116834D+00	0.240775D+00	0.121209D+00	0.240793D+00
0.7	0.895070D-01	0.204554D+00	0.935367D-01	0.205187D+00
0.8	0.687235D-01	0.172361D+00	0.723275D-01	0.173421D+00
0.9	0.529717D-01	0.144338D+00	0.561283D-01	0.145663D+00
1.0	0.410330D-01	0.120306D+00	0.437570D-01	0.121770D+00
1.1	0.319607D-01	0.999209D-01	0.342867D-01	0.101430D+00
1.2	0.250364D-01	0.827665D-01	0.270078D-01	0.842536D-01
1.3	0.197222D-01	0.684157D-01	0.213844D-01	0.698368D-01
1.4	0.156186D-01	0.564634D-01	0.170151D-01	0.577914D-01
1.5	0.124295D-01	0.465417D-01	0.135999D-01	0.477619D-01
1.6	0.993543D-02	0.383265D-01	0.109148D-01	0.394330D-01
1.7	0.797302D-02	0.315375D-01	0.879170D-02	0.325306D-01
1.8	0.642025D-02	0.259356D-01	0.710416D-02	0.268193D-01
1.9	0.518528D-02	0.213186D-01	0.575641D-02	0.220996D-01
2.0	0.419857D-02	0.175169D-01	0.467542D-02	0.182030D-01
2.1	0.340701D-02	0.143888D-01	0.380510D-02	0.149886D-01
2.2	0.276976D-02	0.118164D-01	0.310210D-02	0.123386D-01
2.3	0.225518D-02	0.970195D-02	0.253263D-02	0.101549D-01
2.4	0.183858D-02	0.796461D-02	0.207020D-02	0.835629D-02
2.5	0.150055D-02	0.653753D-02	0.169392D-02	0.687525D-02
2.6	0.122577D-02	0.536558D-02	0.138720D-02	0.565606D-02
2.7	0.100205D-02	0.440335D-02	0.113681D-02	0.465263D-02
2.8	0.819669D-03	0.361343D-02	0.932164D-03	0.382692D-02
2.9	0.670824D-03	0.296504D-02	0.764725D-03	0.314756D-02
3.0	0.549239D-03	0.243289D-02	0.627612D-03	0.258866D-02

log X	$\beta=0.84$ $X_M=0.908548 \text{ } (-0.416523D-01)$		$\beta=0.83$ $X_M=0.902960 \text{ } (-0.443315D-01)$	
	ϵ' 0.537666	ϵ'' 0.433716	ϵ' 0.539835	ϵ'' 0.429356
-3.0	0.999999D+00	0.109613D-02	0.999998D+00	0.110470D-02
-2.9	0.999998D+00	0.137995D-02	0.999998D+00	0.139074D-02
-2.8	0.999996D+00	0.173725D-02	0.999996D+00	0.175083D-02
-2.7	0.999994D+00	0.218706D-02	0.999994D+00	0.220416D-02
-2.6	0.999991D+00	0.275333D-02	0.999990D+00	0.277485D-02
-2.5	0.999985D+00	0.346621D-02	0.999985D+00	0.349331D-02
-2.4	0.999977D+00	0.436365D-02	0.999976D+00	0.439776D-02
-2.3	0.999963D+00	0.549342D-02	0.999962D+00	0.553635D-02
-2.2	0.999942D+00	0.691560D-02	0.999940D+00	0.696964D-02
-2.1	0.999908D+00	0.870583D-02	0.999905D+00	0.877383D-02
-2.0	0.999854D+00	0.109592D-01	0.999849D+00	0.110448D-01
-1.9	0.999769D+00	0.137952D-01	0.999761D+00	0.139029D-01
-1.8	0.999633D+00	0.173640D-01	0.999622D+00	0.174993D-01
-1.7	0.999419D+00	0.218538D-01	0.999401D+00	0.220237D-01
-1.6	0.999080D+00	0.274998D-01	0.999051D+00	0.277129D-01
-1.5	0.998543D+00	0.345952D-01	0.998498D+00	0.348620D-01
-1.4	0.997693D+00	0.435033D-01	0.997622D+00	0.438360D-01
-1.3	0.996352D+00	0.546689D-01	0.996240D+00	0.550817D-01
-1.2	0.994238D+00	0.686287D-01	0.994062D+00	0.691365D-01
-1.1	0.990915D+00	0.860125D-01	0.990641D+00	0.866283D-01
-1.0	0.985719D+00	0.107525D+00	0.985297D+00	0.108255D+00
-0.9	0.977656D+00	0.133887D+00	0.977014D+00	0.134721D+00
-0.8	0.965286D+00	0.165708D+00	0.964331D+00	0.166602D+00
-0.7	0.946633D+00	0.203245D+00	0.945263D+00	0.204096D+00
-0.6	0.919208D+00	0.246016D+00	0.917337D+00	0.246637D+00
-0.5	0.880282D+00	0.292328D+00	0.877907D+00	0.292438D+00
-0.4	0.827571D+00	0.338897D+00	0.824846D+00	0.338160D+00
-0.3	0.760266D+00	0.380944D+00	0.757558D+00	0.379081D+00
-0.2	0.680013D+00	0.413087D+00	0.677856D+00	0.410029D+00
-0.1	0.591126D+00	0.430890D+00	0.590061D+00	0.426869D+00
0.0	0.499678D+00	0.432306D+00	0.500056D+00	0.427815D+00
0.1	0.411834D+00	0.418195D+00	0.413707D+00	0.413820D+00
0.2	0.332361D+00	0.391697D+00	0.335502D+00	0.387937D+00
0.3	0.263927D+00	0.357012D+00	0.267950D+00	0.354169D+00
0.4	0.207235D+00	0.318246D+00	0.211726D+00	0.316417D+00
0.5	0.161607D+00	0.278723D+00	0.166208D+00	0.277848D+00
0.6	0.125621D+00	0.240767D+00	0.130071D+00	0.240697D+00
0.7	0.976176D-01	0.205780D+00	0.101750D+00	0.206330D+00
0.8	0.759939D-01	0.174447D+00	0.797233D-01	0.175439D+00
0.9	0.593546D-01	0.146965D+00	0.626514D-01	0.148242D+00
1.0	0.465540D-01	0.123221D+00	0.494253D-01	0.124658D+00
1.1	0.366859D-01	0.102935D+00	0.391601D-01	0.104435D+00
1.2	0.290503D-01	0.857450D-01	0.311659D-01	0.872398D-01
1.3	0.231140D-01	0.712689D-01	0.249132D-01	0.727112D-01
1.4	0.184743D-01	0.591354D-01	0.199984D-01	0.604948D-01
1.5	0.148279D-01	0.490016D-01	0.161155D-01	0.502606D-01
1.6	0.119463D-01	0.405614D-01	0.130321D-01	0.417114D-01
1.7	0.965718D-02	0.335467D-01	0.105716D-01	0.345859D-01
1.8	0.782982D-02	0.277265D-01	0.859929D-02	0.286573D-01
1.9	0.636454D-02	0.229037D-01	0.701165D-02	0.237315D-01
2.0	0.518491D-02	0.189117D-01	0.572891D-02	0.196433D-01
2.1	0.423188D-02	0.156100D-01	0.468909D-02	0.162533D-01
2.2	0.345956D-02	0.128811D-01	0.384375D-02	0.134443D-01
2.3	0.283201D-02	0.106268D-01	0.315480D-02	0.111180D-01
2.4	0.232093D-02	0.876536D-02	0.259211D-02	0.919244D-02
2.5	0.190389D-02	0.722889D-02	0.213168D-02	0.759909D-02
2.6	0.156303D-02	0.596101D-02	0.175436D-02	0.628107D-02
2.7	0.128404D-02	0.491500D-02	0.144473D-02	0.519108D-02
2.8	0.105543D-02	0.405220D-02	0.119037D-02	0.428985D-02
2.9	0.867922D-03	0.334063D-02	0.981221D-03	0.354482D-02
3.0	0.713996D-03	0.275386D-02	0.809111D-03	0.292900D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.82$ $X_M=0.897396 (-0.470158D-01)$		$\beta=0.81$ $X_M=0.891858 (-0.497045D-01)$	
	ϵ' 0.541979	ϵ'' 0.424972	ϵ' 0.544098	ϵ'' 0.420565
-3.0	0.999998D+00	0.111368D-02	0.999998D+00	0.112311D-02
-2.9	0.999998D+00	0.140204D-02	0.999997D+00	0.141391D-02
-2.8	0.999996D+00	0.176507D-02	0.999996D+00	0.178000D-02
-2.7	0.999994D+00	0.222208D-02	0.999994D+00	0.224088D-02
-2.6	0.999990D+00	0.279742D-02	0.999990D+00	0.282109D-02
-2.5	0.999984D+00	0.352171D-02	0.999984D+00	0.355151D-02
-2.4	0.999975D+00	0.443352D-02	0.999975D+00	0.447102D-02
-2.3	0.999961D+00	0.558135D-02	0.999960D+00	0.562856D-02
-2.2	0.999938D+00	0.702628D-02	0.999936D+00	0.708570D-02
-2.1	0.999902D+00	0.884512D-02	0.999899D+00	0.891989D-02
-2.0	0.999845D+00	0.111345D-01	0.999839D+00	0.112285D-01
-1.9	0.999754D+00	0.140157D-01	0.999746D+00	0.141340D-01
-1.8	0.999610D+00	0.176411D-01	0.999597D+00	0.177898D-01
-1.7	0.999382D+00	0.222018D-01	0.999361D+00	0.223885D-01
-1.6	0.999021D+00	0.279362D-01	0.998988D+00	0.281704D-01
-1.5	0.998450D+00	0.351415D-01	0.998398D+00	0.354344D-01
-1.4	0.997546D+00	0.441845D-01	0.997465D+00	0.445495D-01
-1.3	0.996121D+00	0.555137D-01	0.995993D+00	0.559660D-01
-1.2	0.993875D+00	0.696673D-01	0.993676D+00	0.702222D-01
-1.1	0.990350D+00	0.872710D-01	0.990040D+00	0.879417D-01
-1.0	0.984848D+00	0.109015D+00	0.984372D+00	0.109806D+00
-0.9	0.976333D+00	0.135585D+00	0.975612D+00	0.136480D+00
-0.8	0.963324D+00	0.167521D+00	0.962261D+00	0.168466D+00
-0.7	0.943824D+00	0.204959D+00	0.942315D+00	0.205833D+00
-0.6	0.915388D+00	0.247247D+00	0.913357D+00	0.247843D+00
-0.5	0.875455D+00	0.292505D+00	0.872926D+00	0.292526D+00
-0.4	0.822066D+00	0.337350D+00	0.819232D+00	0.336463D+00
-0.3	0.754833D+00	0.377131D+00	0.752093D+00	0.375090D+00
-0.2	0.675721D+00	0.406891D+00	0.673609D+00	0.403675D+00
-0.1	0.589042D+00	0.422796D+00	0.588068D+00	0.418672D+00
0.0	0.500482D+00	0.423301D+00	0.500953D+00	0.418765D+00
0.1	0.415612D+00	0.409438D+00	0.417549D+00	0.405050D+00
0.2	0.338659D+00	0.384169D+00	0.341832D+00	0.380394D+00
0.3	0.271983D+00	0.351308D+00	0.276023D+00	0.348428D+00
0.4	0.216229D+00	0.314556D+00	0.220744D+00	0.312662D+00
0.5	0.170832D+00	0.276931D+00	0.175479D+00	0.275972D+00
0.6	0.134558D+00	0.240581D+00	0.139083D+00	0.240418D+00
0.7	0.105935D+00	0.206837D+00	0.110171D+00	0.207301D+00
0.8	0.835162D-01	0.176395D+00	0.873733D-01	0.177314D+00
0.9	0.660196D-01	0.149492D+00	0.694601D-01	0.150716D+00
1.0	0.523722D-01	0.126078D+00	0.553958D-01	0.127481D+00
1.1	0.417107D-01	0.105929D+00	0.443393D-01	0.107415D+00
1.2	0.333564D-01	0.887369D-01	0.356236D-01	0.902353D-01
1.3	0.267839D-01	0.741629D-01	0.287282D-01	0.756230D-01
1.4	0.215896D-01	0.618691D-01	0.232502D-01	0.632576D-01
1.5	0.174651D-01	0.515384D-01	0.188791D-01	0.528347D-01
1.6	0.141745D-01	0.428831D-01	0.153759D-01	0.440761D-01
1.7	0.115373D-01	0.356483D-01	0.125565D-01	0.367339D-01
1.8	0.941476D-02	0.296121D-01	0.102785D-01	0.305909D-01
1.9	0.769982D-02	0.245832D-01	0.843121D-02	0.254591D-01
2.0	0.630937D-02	0.203984D-01	0.692836D-02	0.211773D-01
2.1	0.517854D-02	0.169193D-01	0.570218D-02	0.176083D-01
2.2	0.425636D-02	0.140290D-01	0.469920D-02	0.146357D-01
2.3	0.350257D-02	0.116294D-01	0.387697D-02	0.121615D-01
2.4	0.288517D-02	0.963819D-02	0.320165D-02	0.101033D-01
2.5	0.237861D-02	0.798650D-02	0.264608D-02	0.839180D-02
2.6	0.196239D-02	0.661689D-02	0.218838D-02	0.696914D-02
2.7	0.161996D-02	0.548150D-02	0.181088D-02	0.578692D-02
2.8	0.133795D-02	0.454049D-02	0.149921D-02	0.480474D-02
2.9	0.110549D-02	0.376071D-02	0.124167D-02	0.398891D-02
3.0	0.913735D-03	0.311464D-02	0.102871D-02	0.331136D-02

log X	$\beta=0.80$ $X_M=0.886345 (-0.523971D-01)$		$\beta=0.79$ $X_M=0.880860 (-0.550929D-01)$	
	ϵ' 0.546192	ϵ'' 0.416134	ϵ' 0.548260	ϵ'' 0.411681
-3.0	0.999998D+00	0.113300D-02	0.999998D+00	0.114339D-02
-2.9	0.999997D+00	0.142636D-02	0.999997D+00	0.143944D-02
-2.8	0.999996D+00	0.179568D-02	0.999996D+00	0.181214D-02
-2.7	0.999993D+00	0.226062D-02	0.999993D+00	0.228135D-02
-2.6	0.999990D+00	0.284593D-02	0.999989D+00	0.287203D-02
-2.5	0.999983D+00	0.358278D-02	0.999983D+00	0.361563D-02
-2.4	0.999974D+00	0.451039D-02	0.999973D+00	0.455174D-02
-2.3	0.999958D+00	0.567812D-02	0.999957D+00	0.573017D-02
-2.2	0.999934D+00	0.714807D-02	0.999931D+00	0.721358D-02
-2.1	0.999895D+00	0.899838D-02	0.999891D+00	0.908081D-02
-2.0	0.999834D+00	0.113273D-01	0.999828D+00	0.114310D-01
-1.9	0.999737D+00	0.142582D-01	0.999727D+00	0.143886D-01
-1.8	0.999583D+00	0.179459D-01	0.999568D+00	0.181098D-01
-1.7	0.999339D+00	0.225845D-01	0.999316D+00	0.227902D-01
-1.6	0.998954D+00	0.284160D-01	0.998916D+00	0.286739D-01
-1.5	0.998343D+00	0.357416D-01	0.998285D+00	0.360640D-01
-1.4	0.997379D+00	0.449322D-01	0.997286D+00	0.453335D-01
-1.3	0.995857D+00	0.564397D-01	0.995712D+00	0.569360D-01
-1.2	0.993463D+00	0.708028D-01	0.993235D+00	0.714102D-01
-1.1	0.989710D+00	0.886418D-01	0.989357D+00	0.893729D-01
-1.0	0.983865D+00	0.110628D+00	0.983325D+00	0.111484D+00
-0.9	0.974848D+00	0.137406D+00	0.974036D+00	0.138365D+00
-0.8	0.961138D+00	0.169434D+00	0.959952D+00	0.170428D+00
-0.7	0.940730D+00	0.206716D+00	0.939066D+00	0.207606D+00
-0.6	0.911244D+00	0.248421D+00	0.909044D+00	0.248979D+00
-0.5	0.870320D+00	0.292495D+00	0.867637D+00	0.292409D+00
-0.4	0.816347D+00	0.335496D+00	0.813413D+00	0.334446D+00
-0.3	0.749341D+00	0.372958D+00	0.746581D+00	0.370734D+00
-0.2	0.671524D+00	0.400379D+00	0.669469D+00	0.397007D+00
-0.1	0.587142D+00	0.414498D+00	0.586263D+00	0.410277D+00
0.0	0.501470D+00	0.414207D+00	0.502032D+00	0.409629D+00
0.1	0.419516D+00	0.400656D+00	0.421514D+00	0.396254D+00
0.2	0.345021D+00	0.376612D+00	0.348225D+00	0.372820D+00
0.3	0.280073D+00	0.345528D+00	0.284131D+00	0.342607D+00
0.4	0.225270D+00	0.310735D+00	0.229808D+00	0.308774D+00
0.5	0.180149D+00	0.274969D+00	0.184842D+00	0.273922D+00
0.6	0.143645D+00	0.240209D+00	0.148246D+00	0.239952D+00
0.7	0.114461D+00	0.207720D+00	0.118803D+00	0.208093D+00
0.8	0.912950D-01	0.178195D+00	0.952820D-01	0.179037D+00
0.9	0.729737D-01	0.151910D+00	0.765615D-01	0.153074D+00
1.0	0.584975D-01	0.128865D+00	0.616784D-01	0.130230D+00
1.1	0.470475D-01	0.108893D+00	0.498370D-01	0.110360D+00
1.2	0.379695D-01	0.917337D-01	0.403960D-01	0.932311D-01
1.3	0.307483D-01	0.770907D-01	0.328464D-01	0.785650D-01
1.4	0.249823D-01	0.646596D-01	0.267885D-01	0.660744D-01
1.5	0.203597D-01	0.541489D-01	0.219095D-01	0.554807D-01
1.6	0.166386D-01	0.452903D-01	0.179653D-01	0.465253D-01
1.7	0.136317D-01	0.378427D-01	0.147653D-01	0.389747D-01
1.8	0.111928D-01	0.315941D-01	0.121602D-01	0.326216D-01
1.9	0.920809D-02	0.263597D-01	0.100328D-01	0.272852D-01
2.0	0.758802D-02	0.219806D-01	0.829061D-02	0.228087D-01
2.1	0.626203D-02	0.183209D-01	0.686022D-02	0.190578D-01
2.2	0.517415D-02	0.152650D-01	0.568322D-02	0.159176D-01
2.3	0.427977D-02	0.127150D-01	0.471284D-02	0.132906D-01
2.4	0.354317D-02	0.105884D-01	0.391145D-02	0.110942D-01
2.5	0.293556D-02	0.881568D-02	0.324866D-02	0.925885D-02
2.6	0.243370D-02	0.733852D-02	0.269981D-02	0.772572D-02
2.7	0.201873D-02	0.610802D-02	0.224483D-02	0.644550D-02
2.8	0.167527D-02	0.508327D-02	0.186733D-02	0.537677D-02
2.9	0.139077D-02	0.423004D-02	0.155388D-02	0.448478D-02
3.0	0.115495D-02	0.351975D-02	0.129343D-02	0.374045D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.78$ $X_M=0.875404 (-0.577914D-01)$		$\beta=0.77$ $X_M=0.869978 (-0.604919D-01)$	
	ϵ'	ϵ''	ϵ'	ϵ''
	0.550303	0.407204	0.552319	0.402705
-3.0	0.999998D+00	0.115431D-02	0.999998D+00	0.116580D-02
-2.9	0.999997D+00	0.145319D-02	0.999997D+00	0.146765D-02
-2.8	0.999996D+00	0.182945D-02	0.999995D+00	0.184766D-02
-2.7	0.999993D+00	0.230314D-02	0.999993D+00	0.232606D-02
-2.6	0.999989D+00	0.289946D-02	0.999988D+00	0.292831D-02
-2.5	0.999982D+00	0.365016D-02	0.999981D+00	0.368649D-02
-2.4	0.999972D+00	0.459521D-02	0.999971D+00	0.464093D-02
-2.3	0.999955D+00	0.578488D-02	0.999953D+00	0.584243D-02
-2.2	0.999929D+00	0.728244D-02	0.999926D+00	0.735486D-02
-2.1	0.999887D+00	0.916746D-02	0.999883D+00	0.925859D-02
-2.0	0.999822D+00	0.115400D-01	0.999815D+00	0.116546D-01
-1.9	0.999717D+00	0.145256D-01	0.999706D+00	0.146698D-01
-1.8	0.999552D+00	0.182820D-01	0.999535D+00	0.184631D-01
-1.7	0.999291D+00	0.230064D-01	0.999263D+00	0.232337D-01
-1.6	0.998876D+00	0.289448D-01	0.998834D+00	0.292295D-01
-1.5	0.998222D+00	0.364025D-01	0.998154D+00	0.367581D-01
-1.4	0.997187D+00	0.457547D-01	0.997081D+00	0.461969D-01
-1.3	0.995556D+00	0.574564D-01	0.995389D+00	0.580022D-01
-1.2	0.992992D+00	0.720461D-01	0.992732D+00	0.727120D-01
-1.1	0.988981D+00	0.901363D-01	0.988578D+00	0.909336D-01
-1.0	0.982749D+00	0.112375D+00	0.982135D+00	0.113301D+00
-0.9	0.973174D+00	0.139356D+00	0.972258D+00	0.140380D+00
-0.8	0.958698D+00	0.171444D+00	0.957373D+00	0.172483D+00
-0.7	0.937320D+00	0.208499D+00	0.935489D+00	0.209393D+00
-0.6	0.906756D+00	0.249508D+00	0.904377D+00	0.250008D+00
-0.5	0.864877D+00	0.292262D+00	0.862040D+00	0.292051D+00
-0.4	0.810433D+00	0.333309D+00	0.807409D+00	0.332081D+00
-0.3	0.743816D+00	0.368417D+00	0.741050D+00	0.366006D+00
-0.2	0.667444D+00	0.393558D+00	0.665453D+00	0.390035D+00
-0.1	0.585432D+00	0.406009D+00	0.584651D+00	0.401697D+00
0.0	0.502639D+00	0.405032D+00	0.503289D+00	0.400417D+00
0.1	0.423541D+00	0.391847D+00	0.425597D+00	0.387432D+00
0.2	0.351443D+00	0.369020D+00	0.354676D+00	0.365209D+00
0.3	0.288197D+00	0.339666D+00	0.292272D+00	0.336703D+00
0.4	0.234359D+00	0.306778D+00	0.238922D+00	0.304747D+00
0.5	0.189559D+00	0.272831D+00	0.194300D+00	0.271694D+00
0.6	0.152886D+00	0.239646D+00	0.157564D+00	0.239290D+00
0.7	0.123199D+00	0.208419D+00	0.127648D+00	0.208698D+00
0.8	0.993347D-01	0.179838D+00	0.103454D+00	0.180597D+00
0.9	0.802242D-01	0.154207D+00	0.839627D-01	0.155307D+00
1.0	0.649398D-01	0.131573D+00	0.682831D-01	0.132892D+00
1.1	0.527093D-01	0.111816D+00	0.556662D-01	0.113259D+00
1.2	0.429050D-01	0.947261D-01	0.454985D-01	0.962174D-01
1.3	0.350247D-01	0.800448D-01	0.372854D-01	0.815290D-01
1.4	0.286711D-01	0.675011D-01	0.306325D-01	0.689388D-01
1.5	0.235310D-01	0.568294D-01	0.252268D-01	0.581943D-01
1.6	0.193584D-01	0.477810D-01	0.208207D-01	0.490567D-01
1.7	0.159599D-01	0.401296D-01	0.172183D-01	0.413074D-01
1.8	0.131832D-01	0.336736D-01	0.142645D-01	0.347502D-01
1.9	0.109079D-01	0.282358D-01	0.118359D-01	0.292117D-01
2.0	0.903852D-02	0.236619D-01	0.983423D-02	0.245407D-01
2.1	0.749903D-02	0.198193D-01	0.818080D-02	0.206059D-01
2.2	0.622854D-02	0.165939D-01	0.681234D-02	0.172947D-01
2.3	0.517815D-02	0.138888D-01	0.567780D-02	0.145104D-01
2.4	0.430833D-02	0.116215D-01	0.473577D-02	0.121708D-01
2.5	0.358706D-02	0.972203D-02	0.395257D-02	0.102060D-01
2.6	0.298825D-02	0.813149D-02	0.330070D-02	0.855657D-02
2.7	0.249062D-02	0.680009D-02	0.275762D-02	0.717252D-02
2.8	0.207671D-02	0.568593D-02	0.230479D-02	0.601151D-02
2.9	0.173219D-02	0.475380D-02	0.192696D-02	0.503783D-02
3.0	0.144524D-02	0.397412D-02	0.161152D-02	0.422145D-02

log X	$\beta=0.76$		$\beta=0.75$	
	$X_M=0.864582 (-0.631941D-01)$		$X_M=0.859217 (-0.658972D-01)$	
	ε' 0.554310	ε'' 0.398183	ε' 0.556274	ε'' 0.393640
-3.0	0.999998D+00	0.117789D-02	0.999998D+00	0.119064D-02
-2.9	0.999997D+00	0.148288D-02	0.999997D+00	0.149892D-02
-2.8	0.999995D+00	0.186683D-02	0.999995D+00	0.188702D-02
-2.7	0.999992D+00	0.235019D-02	0.999992D+00	0.237561D-02
-2.6	0.999988D+00	0.295869D-02	0.999987D+00	0.299069D-02
-2.5	0.999981D+00	0.372472D-02	0.999980D+00	0.376501D-02
-2.4	0.999969D+00	0.468906D-02	0.999968D+00	0.473977D-02
-2.3	0.999952D+00	0.590301D-02	0.999950D+00	0.596683D-02
-2.2	0.999923D+00	0.743110D-02	0.999920D+00	0.751142D-02
-2.1	0.999878D+00	0.935452D-02	0.999873D+00	0.945558D-02
-2.0	0.999807D+00	0.117753D-01	0.999799D+00	0.119024D-01
-1.9	0.999695D+00	0.148215D-01	0.999682D+00	0.149813D-01
-1.8	0.999517D+00	0.186537D-01	0.999497D+00	0.188545D-01
-1.7	0.999234D+00	0.234728D-01	0.999203D+00	0.237247D-01
-1.6	0.998787D+00	0.295291D-01	0.998738D+00	0.298443D-01
-1.5	0.998081D+00	0.371321D-01	0.998003D+00	0.375255D-01
-1.4	0.996966D+00	0.466615D-01	0.996843D+00	0.471500D-01
-1.3	0.995209D+00	0.585751D-01	0.995016D+00	0.591765D-01
-1.2	0.992452D+00	0.734096D-01	0.992151D+00	0.741405D-01
-1.1	0.988147D+00	0.917665D-01	0.987684D+00	0.926365D-01
-1.0	0.981480D+00	0.114265D+00	0.980779D+00	0.115266D+00
-0.9	0.971284D+00	0.141437D+00	0.970247D+00	0.142527D+00
-0.8	0.955972D+00	0.173543D+00	0.954491D+00	0.174622D+00
-0.7	0.933566D+00	0.210285D+00	0.931552D+00	0.211172D+00
-0.6	0.901907D+00	0.250473D+00	0.899343D+00	0.250898D+00
-0.5	0.859127D+00	0.291769D+00	0.856140D+00	0.291414D+00
-0.4	0.804344D+00	0.330761D+00	0.801242D+00	0.329344D+00
-0.3	0.738285D+00	0.363500D+00	0.735526D+00	0.360900D+00
-0.2	0.663498D+00	0.386437D+00	0.661580D+00	0.382768D+00
-0.1	0.583919D+00	0.397342D+00	0.583236D+00	0.392945D+00
0.0	0.503984D+00	0.395784D+00	0.504721D+00	0.391134D+00
0.1	0.427681D+00	0.383011D+00	0.429793D+00	0.378583D+00
0.2	0.357924D+00	0.361389D+00	0.361185D+00	0.357558D+00
0.3	0.296355D+00	0.333718D+00	0.300447D+00	0.330710D+00
0.4	0.243498D+00	0.302680D+00	0.248087D+00	0.300577D+00
0.5	0.199065D+00	0.270511D+00	0.203853D+00	0.269282D+00
0.6	0.162280D+00	0.238884D+00	0.167036D+00	0.238427D+00
0.7	0.132150D+00	0.208927D+00	0.136707D+00	0.209106D+00
0.8	0.107640D+00	0.181313D+00	0.111893D+00	0.181985D+00
0.9	0.877779D-01	0.156372D+00	0.916706D-01	0.157401D+00
1.0	0.717094D-01	0.134188D+00	0.752200D-01	0.135457D+00
1.1	0.587092D-01	0.114688D+00	0.618401D-01	0.116100D+00
1.2	0.481786D-01	0.977037D-01	0.509472D-01	0.991834D-01
1.3	0.396309D-01	0.830163D-01	0.420635D-01	0.845056D-01
1.4	0.326754D-01	0.703866D-01	0.348023D-01	0.718434D-01
1.5	0.269997D-01	0.595747D-01	0.288523D-01	0.609700D-01
1.6	0.223550D-01	0.503522D-01	0.239640D-01	0.516668D-01
1.7	0.185433D-01	0.425078D-01	0.199377D-01	0.437306D-01
1.8	0.154068D-01	0.358512D-01	0.166131D-01	0.369768D-01
1.9	0.128195D-01	0.302132D-01	0.138616D-01	0.312404D-01
2.0	0.106804D-01	0.254453D-01	0.115796D-01	0.263761D-01
2.1	0.890804D-02	0.214182D-01	0.968337D-02	0.222566D-01
2.2	0.743698D-02	0.180204D-01	0.810496D-02	0.187717D-01
2.3	0.621400D-02	0.151560D-01	0.678912D-02	0.158263D-01
2.4	0.519583D-02	0.127430D-01	0.569072D-02	0.133387D-01
2.5	0.434713D-02	0.107114D-01	0.477278D-02	0.112390D-01
2.6	0.363894D-02	0.900171D-02	0.400487D-02	0.946770D-02
2.7	0.304746D-02	0.756357D-02	0.336191D-02	0.797403D-02
2.8	0.255308D-02	0.635424D-02	0.282319D-02	0.671493D-02
2.9	0.213958D-02	0.533760D-02	0.237151D-02	0.565389D-02
3.0	0.179352D-02	0.448315D-02	0.199260D-02	0.475997D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.74$ $X_M=0.853885 (-0.686007D-01)$		$\beta=0.73$ $X_M=0.848586 (-0.713043D-01)$	
	ϵ' 0.558212	ϵ'' 0.389075	ϵ' 0.560123	ϵ'' 0.384488
-3.0	0.999998D+00	0.120407D-02	0.999998D+00	0.121825D-02
-2.9	0.999997D+00	0.151583D-02	0.999997D+00	0.153368D-02
-2.8	0.999995D+00	0.190831D-02	0.999995D+00	0.193078D-02
-2.7	0.999992D+00	0.240241D-02	0.999991D+00	0.243070D-02
-2.6	0.999987D+00	0.302443D-02	0.999986D+00	0.306004D-02
-2.5	0.999979D+00	0.380748D-02	0.999978D+00	0.385231D-02
-2.4	0.999967D+00	0.479323D-02	0.999965D+00	0.484966D-02
-2.3	0.999947D+00	0.603412D-02	0.999945D+00	0.610513D-02
-2.2	0.999917D+00	0.759611D-02	0.999913D+00	0.768547D-02
-2.1	0.999868D+00	0.956213D-02	0.999862D+00	0.967456D-02
-2.0	0.999791D+00	0.120364D-01	0.999782D+00	0.121778D-01
-1.9	0.999669D+00	0.151497D-01	0.999654D+00	0.153275D-01
-1.8	0.999475D+00	0.190660D-01	0.999452D+00	0.192892D-01
-1.7	0.999169D+00	0.239900D-01	0.999132D+00	0.242699D-01
-1.6	0.998684D+00	0.301764D-01	0.998626D+00	0.305266D-01
-1.5	0.997918D+00	0.379397D-01	0.997827D+00	0.383761D-01
-1.4	0.996710D+00	0.476637D-01	0.996566D+00	0.482045D-01
-1.3	0.994808D+00	0.598082D-01	0.994584D+00	0.604722D-01
-1.2	0.991828D+00	0.749067D-01	0.991480D+00	0.757099D-01
-1.1	0.987187D+00	0.935454D-01	0.986654D+00	0.944947D-01
-1.0	0.980029D+00	0.116306D+00	0.979226D+00	0.117387D+00
-0.9	0.969143D+00	0.143651D+00	0.967967D+00	0.144807D+00
-0.8	0.952924D+00	0.175719D+00	0.951268D+00	0.176831D+00
-0.7	0.929439D+00	0.212049D+00	0.927226D+00	0.212911D+00
-0.6	0.896684D+00	0.251278D+00	0.893929D+00	0.251606D+00
-0.5	0.853081D+00	0.290978D+00	0.849951D+00	0.290459D+00
-0.4	0.798106D+00	0.327829D+00	0.794939D+00	0.326213D+00
-0.3	0.732776D+00	0.358205D+00	0.730038D+00	0.355416D+00
-0.2	0.659702D+00	0.379028D+00	0.657865D+00	0.375219D+00
-0.1	0.582603D+00	0.388509D+00	0.582020D+00	0.384034D+00
0.0	0.505500D+00	0.386467D+00	0.506321D+00	0.381786D+00
0.1	0.431930D+00	0.374148D+00	0.434094D+00	0.369705D+00
0.2	0.364459D+00	0.353715D+00	0.367747D+00	0.349860D+00
0.3	0.304547D+00	0.327678D+00	0.308656D+00	0.324622D+00
0.4	0.252688D+00	0.298436D+00	0.257303D+00	0.296257D+00
0.5	0.208666D+00	0.268005D+00	0.213504D+00	0.266681D+00
0.6	0.171831D+00	0.237918D+00	0.176665D+00	0.237357D+00
0.7	0.141319D+00	0.209235D+00	0.145985D+00	0.209311D+00
0.8	0.116214D+00	0.182611D+00	0.120604D+00	0.183190D+00
0.9	0.956418D-01	0.158392D+00	0.996923D-01	0.159345D+00
1.0	0.788162D-01	0.136698D+00	0.824992D-01	0.137910D+00
1.1	0.650604D-01	0.117495D+00	0.683719D-01	0.118870D+00
1.2	0.538064D-01	0.100655D+00	0.567583D-01	0.102117D+00
1.3	0.445856D-01	0.859955D-01	0.471996D-01	0.874846D-01
1.4	0.370158D-01	0.733082D-01	0.393186D-01	0.747798D-01
1.5	0.307874D-01	0.623792D-01	0.328081D-01	0.638014D-01
1.6	0.256508D-01	0.530000D-01	0.274183D-01	0.543511D-01
1.7	0.214045D-01	0.449754D-01	0.229468D-01	0.462417D-01
1.8	0.178863D-01	0.381267D-01	0.192295D-01	0.393008D-01
1.9	0.149651D-01	0.322935D-01	0.161331D-01	0.333723D-01
2.0	0.125349D-01	0.273334D-01	0.135492D-01	0.283174D-01
2.1	0.105096D-01	0.231216D-01	0.113895D-01	0.240134D-01
2.2	0.881889D-02	0.195491D-01	0.958157D-02	0.203532D-01
2.3	0.740563D-02	0.165219D-01	0.806618D-02	0.172434D-01
2.4	0.622278D-02	0.139586D-01	0.679449D-02	0.146036D-01
2.5	0.523170D-02	0.117897D-01	0.572623D-02	0.123641D-01
2.6	0.440051D-02	0.995533D-02	0.482806D-02	0.104654D-01
2.7	0.370285D-02	0.840469D-02	0.407230D-02	0.885639D-02
2.8	0.311686D-02	0.709437D-02	0.343595D-02	0.749340D-02
2.9	0.262436D-02	0.598748D-02	0.289984D-02	0.633921D-02
3.0	0.221022D-02	0.505269D-02	0.244795D-02	0.536211D-02

log X	$\beta=0.72$ $X_M=0.843321 (-0.740073D-01)$		$\beta=0.71$ $X_M=0.838090 (-0.767092D-01)$	
	ε' 0.562007	ε'' 0.379880	ε' 0.563865	ε'' 0.375251
-3.0	0.999998D+00	0.123322D-02	0.999998D+00	0.124906D-02
-2.9	0.999996D+00	0.155253D-02	0.999996D+00	0.157247D-02
-2.8	0.999994D+00	0.195452D-02	0.999994D+00	0.197961D-02
-2.7	0.999991D+00	0.246058D-02	0.999990D+00	0.249217D-02
-2.6	0.999986D+00	0.309765D-02	0.999985D+00	0.313742D-02
-2.5	0.999977D+00	0.389965D-02	0.999976D+00	0.394971D-02
-2.4	0.999964D+00	0.490925D-02	0.999962D+00	0.497226D-02
-2.3	0.999943D+00	0.618014D-02	0.999940D+00	0.625944D-02
-2.2	0.999909D+00	0.777986D-02	0.999905D+00	0.787965D-02
-2.1	0.999856D+00	0.979331D-02	0.999849D+00	0.991885D-02
-2.0	0.999772D+00	0.123271D-01	0.999761D+00	0.124850D-01
-1.9	0.999638D+00	0.155152D-01	0.999621D+00	0.157135D-01
-1.8	0.999427D+00	0.195249D-01	0.999399D+00	0.197739D-01
-1.7	0.999092D+00	0.245653D-01	0.999049D+00	0.248774D-01
-1.6	0.998563D+00	0.308960D-01	0.998495D+00	0.312860D-01
-1.5	0.997728D+00	0.388363D-01	0.997620D+00	0.393217D-01
-1.4	0.996410D+00	0.487741D-01	0.996242D+00	0.493743D-01
-1.3	0.994341D+00	0.611703D-01	0.994078D+00	0.619046D-01
-1.2	0.991104D+00	0.765523D-01	0.990698D+00	0.774358D-01
-1.1	0.986079D+00	0.954861D-01	0.985461D+00	0.965214D-01
-1.0	0.978366D+00	0.118508D+00	0.977443D+00	0.119671D+00
-0.9	0.966715D+00	0.145995D+00	0.965380D+00	0.147213D+00
-0.8	0.949517D+00	0.177954D+00	0.947666D+00	0.179085D+00
-0.7	0.924909D+00	0.213754D+00	0.922486D+00	0.214572D+00
-0.6	0.891079D+00	0.251878D+00	0.888132D+00	0.252087D+00
-0.5	0.846752D+00	0.289850D+00	0.843488D+00	0.289149D+00
-0.4	0.791747D+00	0.324494D+00	0.788532D+00	0.322670D+00
-0.3	0.727315D+00	0.352533D+00	0.724611D+00	0.349557D+00
-0.2	0.656071D+00	0.371342D+00	0.654321D+00	0.367400D+00
-0.1	0.581487D+00	0.379523D+00	0.581003D+00	0.374976D+00
0.0	0.507183D+00	0.377089D+00	0.508084D+00	0.372377D+00
0.1	0.436284D+00	0.365256D+00	0.438497D+00	0.360798D+00
0.2	0.371047D+00	0.345992D+00	0.374360D+00	0.342111D+00
0.3	0.312774D+00	0.321540D+00	0.316900D+00	0.318433D+00
0.4	0.261931D+00	0.294040D+00	0.266572D+00	0.291784D+00
0.5	0.218366D+00	0.265307D+00	0.223253D+00	0.263884D+00
0.6	0.181538D+00	0.236741D+00	0.186451D+00	0.236071D+00
0.7	0.150706D+00	0.209333D+00	0.155482D+00	0.209301D+00
0.8	0.125062D+00	0.183720D+00	0.129591D+00	0.184199D+00
0.9	0.103823D+00	0.160256D+00	0.108035D+00	0.161125D+00
1.0	0.862703D-01	0.139090D+00	0.901308D-01	0.140238D+00
1.1	0.717763D-01	0.120225D+00	0.752753D-01	0.121556D+00
1.2	0.598051D-01	0.103568D+00	0.629487D-01	0.105006D+00
1.3	0.499079D-01	0.889713D-01	0.527131D-01	0.904543D-01
1.4	0.417136D-01	0.762569D-01	0.442034D-01	0.777381D-01
1.5	0.349172D-01	0.652355D-01	0.371179D-01	0.666806D-01
1.6	0.292698D-01	0.557194D-01	0.312083D-01	0.571041D-01
1.7	0.245679D-01	0.475293D-01	0.262711D-01	0.488374D-01
1.8	0.206460D-01	0.404989D-01	0.221391D-01	0.417206D-01
1.9	0.173688D-01	0.344770D-01	0.186755D-01	0.356075D-01
2.0	0.146257D-01	0.293283D-01	0.157676D-01	0.303662D-01
2.1	0.123262D-01	0.249326D-01	0.133229D-01	0.258793D-01
2.2	0.103959D-01	0.211843D-01	0.112650D-01	0.220431D-01
2.3	0.877354D-02	0.179915D-01	0.953066D-02	0.187668D-01
2.4	0.740849D-02	0.152742D-01	0.806757D-02	0.159711D-01
2.5	0.625885D-02	0.129631D-01	0.683219D-02	0.135874D-01
2.6	0.528981D-02	0.109988D-01	0.578825D-02	0.115562D-01
2.7	0.447240D-02	0.932996D-02	0.490548D-02	0.982628D-02
2.8	0.378246D-02	0.791287D-02	0.415856D-02	0.835365D-02
2.9	0.319980D-02	0.670993D-02	0.352624D-02	0.710050D-02
3.0	0.270750D-02	0.568909D-02	0.299071D-02	0.603447D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.70$		$\beta=0.69$	
	$X_M=0.832895 (-0.794097D-01)$		$X_M=0.827736 (-0.821082D-01)$	
	ϵ'	ϵ''	ϵ'	ϵ''
	0.565697	0.370601	0.567502	0.365930
-3.0	0.999997D+00	0.126582D-02	0.999997D+00	0.128357D-02
-2.9	0.999996D+00	0.159356D-02	0.999996D+00	0.161592D-02
-2.8	0.999994D+00	0.200617D-02	0.999993D+00	0.203431D-02
-2.7	0.999990D+00	0.252560D-02	0.999989D+00	0.256102D-02
-2.6	0.999984D+00	0.317951D-02	0.999983D+00	0.322409D-02
-2.5	0.999975D+00	0.400269D-02	0.999974D+00	0.405881D-02
-2.4	0.999960D+00	0.503894D-02	0.999958D+00	0.510958D-02
-2.3	0.999937D+00	0.634336D-02	0.999934D+00	0.643227D-02
-2.2	0.999900D+00	0.798525D-02	0.999895D+00	0.809711D-02
-2.1	0.999841D+00	0.100517D-01	0.999833D+00	0.101924D-01
-2.0	0.999749D+00	0.126520D-01	0.999736D+00	0.128289D-01
-1.9	0.999602D+00	0.159234D-01	0.999581D+00	0.161457D-01
-1.8	0.999369D+00	0.200373D-01	0.999337D+00	0.203162D-01
-1.7	0.999002D+00	0.252074D-01	0.998950D+00	0.255566D-01
-1.6	0.998420D+00	0.316983D-01	0.998339D+00	0.321343D-01
-1.5	0.997503D+00	0.398344D-01	0.997375D+00	0.403761D-01
-1.4	0.996058D+00	0.500073D-01	0.995859D+00	0.506752D-01
-1.3	0.993792D+00	0.626774D-01	0.993482D+00	0.634910D-01
-1.2	0.990258D+00	0.783627D-01	0.989781D+00	0.793350D-01
-1.1	0.984793D+00	0.976021D-01	0.984073D+00	0.987296D-01
-1.0	0.976453D+00	0.120876D+00	0.975389D+00	0.122122D+00
-0.9	0.963956D+00	0.148461D+00	0.962439D+00	0.149736D+00
-0.8	0.945710D+00	0.180222D+00	0.943644D+00	0.181358D+00
-0.7	0.919952D+00	0.215360D+00	0.917307D+00	0.216111D+00
-0.6	0.885090D+00	0.252228D+00	0.881952D+00	0.252294D+00
-0.5	0.840162D+00	0.288350D+00	0.836776D+00	0.287449D+00
-0.4	0.785298D+00	0.320740D+00	0.782050D+00	0.318703D+00
-0.3	0.721928D+00	0.346489D+00	0.719270D+00	0.343330D+00
-0.2	0.652616D+00	0.363395D+00	0.650958D+00	0.359327D+00
-0.1	0.580569D+00	0.370395D+00	0.580185D+00	0.365781D+00
0.0	0.509025D+00	0.367652D+00	0.510004D+00	0.362913D+00
0.1	0.440735D+00	0.356332D+00	0.442996D+00	0.351858D+00
0.2	0.377685D+00	0.338216D+00	0.381023D+00	0.334306D+00
0.3	0.321035D+00	0.315300D+00	0.325179D+00	0.312139D+00
0.4	0.271226D+00	0.289489D+00	0.275895D+00	0.287152D+00
0.5	0.228164D+00	0.262412D+00	0.233101D+00	0.260888D+00
0.6	0.191404D+00	0.235345D+00	0.196397D+00	0.234563D+00
0.7	0.160314D+00	0.209213D+00	0.165202D+00	0.209068D+00
0.8	0.134189D+00	0.184628D+00	0.138857D+00	0.185003D+00
0.9	0.112328D+00	0.161950D+00	0.116704D+00	0.162730D+00
1.0	0.940820D-01	0.141351D+00	0.981250D-01	0.142427D+00
1.1	0.788705D-01	0.122863D+00	0.825637D-01	0.124143D+00
1.2	0.661914D-01	0.106429D+00	0.695353D-01	0.107835D+00
1.3	0.556177D-01	0.919317D-01	0.586243D-01	0.934019D-01
1.4	0.467910D-01	0.792221D-01	0.494793D-01	0.807073D-01
1.5	0.394132D-01	0.681355D-01	0.418063D-01	0.695988D-01
1.6	0.332373D-01	0.585042D-01	0.353601D-01	0.599188D-01
1.7	0.280597D-01	0.501655D-01	0.299374D-01	0.515128D-01
1.8	0.237123D-01	0.429657D-01	0.253693D-01	0.442337D-01
1.9	0.200567D-01	0.367637D-01	0.215160D-01	0.379454D-01
2.0	0.169784D-01	0.314314D-01	0.182616D-01	0.325237D-01
2.1	0.143829D-01	0.268540D-01	0.155098D-01	0.278569D-01
2.2	0.121920D-01	0.229300D-01	0.131805D-01	0.238454D-01
2.3	0.103406D-01	0.195699D-01	0.112068D-01	0.204012D-01
2.4	0.877469D-02	0.166952D-01	0.953301D-02	0.174470D-01
2.5	0.744906D-02	0.142378D-01	0.811243D-02	0.149151D-01
2.6	0.632602D-02	0.121385D-01	0.690594D-02	0.127467D-01
2.7	0.537402D-02	0.103462D-01	0.588065D-02	0.108906D-01
2.8	0.456653D-02	0.881664D-02	0.500887D-02	0.930275D-02
2.9	0.388130D-02	0.751185D-02	0.426730D-02	0.794488D-02
3.0	0.329956D-02	0.639917D-02	0.363621D-02	0.678411D-02

log X	$\beta=0.68$		$\beta=0.67$	
	$X_M=0.822613 (-0.848044D-01)$		$X_M=0.817527 (-0.874978D-01)$	
	ϵ' 0.569280	ϵ'' 0.361239	ϵ' 0.571032	ϵ'' 0.356528
-3.0	0.999997D+00	0.130240D-02	0.999997D+00	0.132239D-02
-2.9	0.999996D+00	0.163962D-02	0.999995D+00	0.166479D-02
-2.8	0.999993D+00	0.206415D-02	0.999993D+00	0.209583D-02
-2.7	0.999989D+00	0.259859D-02	0.999988D+00	0.263847D-02
-2.6	0.999982D+00	0.327138D-02	0.999981D+00	0.332159D-02
-2.5	0.999972D+00	0.411834D-02	0.999971D+00	0.418153D-02
-2.4	0.999956D+00	0.518450D-02	0.999953D+00	0.526404D-02
-2.3	0.999930D+00	0.652655D-02	0.999926D+00	0.662665D-02
-2.2	0.999889D+00	0.821574D-02	0.999883D+00	0.834167D-02
-2.1	0.999824D+00	0.103416D-01	0.999814D+00	0.105000D-01
-2.0	0.999721D+00	0.130165D-01	0.999706D+00	0.132156D-01
-1.9	0.999559D+00	0.163813D-01	0.999534D+00	0.166313D-01
-1.8	0.999301D+00	0.206117D-01	0.999262D+00	0.209253D-01
-1.7	0.998894D+00	0.259266D-01	0.998832D+00	0.263189D-01
-1.6	0.998251D+00	0.325958D-01	0.998153D+00	0.330849D-01
-1.5	0.997236D+00	0.409489D-01	0.997084D+00	0.415552D-01
-1.4	0.995641D+00	0.513803D-01	0.995403D+00	0.521253D-01
-1.3	0.993145D+00	0.643477D-01	0.992776D+00	0.652503D-01
-1.2	0.989264D+00	0.803549D-01	0.988701D+00	0.814248D-01
-1.1	0.983294D+00	0.999055D-01	0.982451D+00	0.101131D+00
-1.0	0.974246D+00	0.123410D+00	0.973018D+00	0.124740D+00
-0.9	0.960822D+00	0.151035D+00	0.959099D+00	0.152355D+00
-0.8	0.941465D+00	0.182490D+00	0.939166D+00	0.183611D+00
-0.7	0.914548D+00	0.216819D+00	0.911674D+00	0.217477D+00
-0.6	0.878722D+00	0.252279D+00	0.875399D+00	0.252177D+00
-0.5	0.833336D+00	0.286443D+00	0.829844D+00	0.285328D+00
-0.4	0.778792D+00	0.316557D+00	0.775529D+00	0.314303D+00
-0.3	0.716640D+00	0.340081D+00	0.714040D+00	0.336743D+00
-0.2	0.649348D+00	0.355200D+00	0.647786D+00	0.351014D+00
-0.1	0.579849D+00	0.361136D+00	0.579562D+00	0.356461D+00
0.0	0.511020D+00	0.358160D+00	0.512074D+00	0.353395D+00
0.1	0.445281D+00	0.347375D+00	0.447587D+00	0.342883D+00
0.2	0.384372D+00	0.330381D+00	0.387733D+00	0.326441D+00
0.3	0.329331D+00	0.308951D+00	0.333492D+00	0.305734D+00
0.4	0.280577D+00	0.284775D+00	0.285273D+00	0.282356D+00
0.5	0.238062D+00	0.259312D+00	0.243049D+00	0.257685D+00
0.6	0.201430D+00	0.233724D+00	0.206503D+00	0.232826D+00
0.7	0.170145D+00	0.208866D+00	0.175145D+00	0.208604D+00
0.8	0.143596D+00	0.185324D+00	0.148407D+00	0.185589D+00
0.9	0.121164D+00	0.163461D+00	0.125708D+00	0.164144D+00
1.0	0.102261D+00	0.143465D+00	0.106492D+00	0.144462D+00
1.1	0.863567D-01	0.125395D+00	0.902510D-01	0.126616D+00
1.2	0.729827D-01	0.109223D+00	0.765355D-01	0.110591D+00
1.3	0.617354D-01	0.948631D-01	0.649537D-01	0.963134D-01
1.4	0.522713D-01	0.821921D-01	0.551699D-01	0.836748D-01
1.5	0.443005D-01	0.710692D-01	0.468992D-01	0.725452D-01
1.6	0.375803D-01	0.613468D-01	0.399014D-01	0.627870D-01
1.7	0.319077D-01	0.528785D-01	0.339745D-01	0.542618D-01
1.8	0.271137D-01	0.455240D-01	0.289494D-01	0.468360D-01
1.9	0.230573D-01	0.391522D-01	0.246844D-01	0.403839D-01
2.0	0.196211D-01	0.336432D-01	0.210608D-01	0.347897D-01
2.1	0.167073D-01	0.288881D-01	0.179792D-01	0.299477D-01
2.2	0.142339D-01	0.247896D-01	0.153562D-01	0.257630D-01
2.3	0.121326D-01	0.212614D-01	0.131217D-01	0.221510D-01
2.4	0.103458D-01	0.182272D-01	0.112167D-01	0.190364D-01
2.5	0.882549D-02	0.156200D-01	0.959160D-02	0.163533D-01
2.6	0.753101D-02	0.133814D-01	0.820443D-02	0.140435D-01
2.7	0.642821D-02	0.114604D-01	0.701973D-02	0.120565D-01
2.8	0.548824D-02	0.981292D-02	0.600747D-02	0.103481D-01
2.9	0.468671D-02	0.840056D-02	0.514221D-02	0.887986D-02
3.0	0.400297D-02	0.719025D-02	0.440233D-02	0.761857D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.66$ $X_M=0.812479$ ($-0.901880D-01$)		$\beta=0.65$ $X_M=0.807468$ ($-0.928747D-01$)	
	ϵ' 0.572758	ϵ'' 0.351796	ϵ' 0.574457	ϵ'' 0.347045
-3.0	0.999997D+00	0.134364D-02	0.999997D+00	0.136626D-02
-2.9	0.999995D+00	0.169154D-02	0.999995D+00	0.172002D-02
-2.8	0.999992D+00	0.212951D-02	0.999992D+00	0.216536D-02
-2.7	0.999988D+00	0.268087D-02	0.999987D+00	0.272599D-02
-2.6	0.999980D+00	0.337496D-02	0.999979D+00	0.343176D-02
-2.5	0.999969D+00	0.424871D-02	0.999967D+00	0.432021D-02
-2.4	0.999951D+00	0.534859D-02	0.999948D+00	0.543857D-02
-2.3	0.999922D+00	0.673304D-02	0.999917D+00	0.684627D-02
-2.2	0.999876D+00	0.847553D-02	0.999868D+00	0.861797D-02
-2.1	0.999803D+00	0.106683D-01	0.999791D+00	0.108474D-01
-2.0	0.999689D+00	0.134272D-01	0.999670D+00	0.136522D-01
-1.9	0.999507D+00	0.168969D-01	0.999477D+00	0.171794D-01
-1.8	0.999219D+00	0.212582D-01	0.999172D+00	0.216123D-01
-1.7	0.998764D+00	0.267353D-01	0.998690D+00	0.271777D-01
-1.6	0.998047D+00	0.336036D-01	0.997929D+00	0.341543D-01
-1.5	0.996916D+00	0.421974D-01	0.996732D+00	0.428781D-01
-1.4	0.995142D+00	0.529127D-01	0.994856D+00	0.537454D-01
-1.3	0.992374D+00	0.662013D-01	0.991933D+00	0.672036D-01
-1.2	0.988089D+00	0.825466D-01	0.987422D+00	0.837227D-01
-1.1	0.981538D+00	0.102407D+00	0.980549D+00	0.103733D+00
-1.0	0.971697D+00	0.126109D+00	0.970277D+00	0.127517D+00
-0.9	0.957263D+00	0.153694D+00	0.955308D+00	0.155045D+00
-0.8	0.936745D+00	0.184716D+00	0.934196D+00	0.185797D+00
-0.7	0.908683D+00	0.218078D+00	0.905575D+00	0.218614D+00
-0.6	0.871988D+00	0.251983D+00	0.868490D+00	0.251690D+00
-0.5	0.826305D+00	0.284101D+00	0.822724D+00	0.282760D+00
-0.4	0.772263D+00	0.311940D+00	0.768999D+00	0.309468D+00
-0.3	0.711472D+00	0.333319D+00	0.708940D+00	0.329809D+00
-0.2	0.646274D+00	0.346773D+00	0.644811D+00	0.342476D+00
-0.1	0.579323D+00	0.351757D+00	0.579131D+00	0.347025D+00
0.0	0.513164D+00	0.348617D+00	0.514289D+00	0.343827D+00
0.1	0.449915D+00	0.338382D+00	0.452264D+00	0.333871D+00
0.2	0.391106D+00	0.322483D+00	0.394489D+00	0.318509D+00
0.3	0.337662D+00	0.302488D+00	0.341841D+00	0.299213D+00
0.4	0.289983D+00	0.279894D+00	0.294707D+00	0.277389D+00
0.5	0.248062D+00	0.256004D+00	0.253100D+00	0.254269D+00
0.6	0.211617D+00	0.231869D+00	0.216771D+00	0.230852D+00
0.7	0.180202D+00	0.208281D+00	0.185315D+00	0.207896D+00
0.8	0.153290D+00	0.185797D+00	0.158244D+00	0.185945D+00
0.9	0.130337D+00	0.164775D+00	0.135052D+00	0.165353D+00
1.0	0.110818D+00	0.145416D+00	0.115241D+00	0.146326D+00
1.1	0.942484D-01	0.127804D+00	0.983507D-01	0.128957D+00
1.2	0.801962D-01	0.111935D+00	0.839669D-01	0.113255D+00
1.3	0.682819D-01	0.977508D-01	0.717226D-01	0.991731D-01
1.4	0.581783D-01	0.851535D-01	0.612996D-01	0.866265D-01
1.5	0.496058D-01	0.740253D-01	0.524237D-01	0.755078D-01
1.6	0.423271D-01	0.642380D-01	0.448612D-01	0.656986D-01
1.7	0.361417D-01	0.556615D-01	0.384132D-01	0.570767D-01
1.8	0.308805D-01	0.481690D-01	0.329112D-01	0.495222D-01
1.9	0.264015D-01	0.416401D-01	0.282127D-01	0.429201D-01
2.0	0.225847D-01	0.359631D-01	0.241972D-01	0.371632D-01
2.1	0.193296D-01	0.310359D-01	0.207627D-01	0.321526D-01
2.2	0.165512D-01	0.267659D-01	0.178231D-01	0.277985D-01
2.3	0.141779D-01	0.230703D-01	0.153054D-01	0.240198D-01
2.4	0.121493D-01	0.198753D-01	0.131477D-01	0.207443D-01
2.5	0.104143D-01	0.171156D-01	0.112975D-01	0.179078D-01
2.6	0.892962D-02	0.147339D-01	0.971021D-02	0.154534D-01
2.7	0.765844D-02	0.126798D-01	0.834781D-02	0.133312D-01
2.8	0.656963D-02	0.109092D-01	0.717800D-02	0.114972D-01
2.9	0.563668D-02	0.938376D-02	0.617320D-02	0.991328D-02
3.0	0.483699D-02	0.807008D-02	0.530986D-02	0.854582D-02

log X	$\beta=0.64$		$\beta=0.63$	
	$X_M=0.802496 (-0.955574D-01)$		$X_M=0.797561 (-0.982359D-01)$	
	ε' 0.576130	ε'' 0.342274	ε' 0.577777	ε'' 0.337484
-3.0	0.999996D+00	0.139037D-02	0.999996D+00	0.141610D-02
-2.9	0.999994D+00	0.175036D-02	0.999994D+00	0.178275D-02
-2.8	0.999991D+00	0.220356D-02	0.999991D+00	0.224433D-02
-2.7	0.999986D+00	0.277408D-02	0.999985D+00	0.282540D-02
-2.6	0.999978D+00	0.349229D-02	0.999976D+00	0.355689D-02
-2.5	0.999965D+00	0.439640D-02	0.999962D+00	0.447770D-02
-2.4	0.999944D+00	0.553446D-02	0.999941D+00	0.563678D-02
-2.3	0.999912D+00	0.696693D-02	0.999906D+00	0.709567D-02
-2.2	0.999860D+00	0.876974D-02	0.999851D+00	0.893168D-02
-2.1	0.999778D+00	0.110383D-01	0.999764D+00	0.112418D-01
-2.0	0.999649D+00	0.138920D-01	0.999625D+00	0.141477D-01
-1.9	0.999444D+00	0.174803D-01	0.999407D+00	0.178011D-01
-1.8	0.999119D+00	0.219891D-01	0.999061D+00	0.223908D-01
-1.7	0.998607D+00	0.276484D-01	0.998516D+00	0.281496D-01
-1.6	0.997799D+00	0.347394D-01	0.997656D+00	0.353616D-01
-1.5	0.996529D+00	0.436002D-01	0.996305D+00	0.443667D-01
-1.4	0.994541D+00	0.546265D-01	0.994194D+00	0.555591D-01
-1.3	0.991450D+00	0.682598D-01	0.990920D+00	0.693729D-01
-1.2	0.986693D+00	0.849548D-01	0.985895D+00	0.862433D-01
-1.1	0.979477D+00	0.105111D+00	0.978313D+00	0.106541D+00
-1.0	0.968750D+00	0.128960D+00	0.967108D+00	0.130437D+00
-0.9	0.953228D+00	0.156405D+00	0.951016D+00	0.157766D+00
-0.8	0.931517D+00	0.186848D+00	0.928704D+00	0.187861D+00
-0.7	0.902351D+00	0.219079D+00	0.899012D+00	0.219465D+00
-0.6	0.864909D+00	0.251293D+00	0.861249D+00	0.250787D+00
-0.5	0.819105D+00	0.281300D+00	0.815453D+00	0.279722D+00
-0.4	0.765742D+00	0.306887D+00	0.762495D+00	0.304199D+00
-0.3	0.706445D+00	0.326216D+00	0.703990D+00	0.322542D+00
-0.2	0.643399D+00	0.338128D+00	0.642037D+00	0.333728D+00
-0.1	0.578987D+00	0.342267D+00	0.578889D+00	0.337483D+00
0.0	0.515448D+00	0.339025D+00	0.516641D+00	0.334210D+00
0.1	0.454633D+00	0.329350D+00	0.457023D+00	0.324818D+00
0.2	0.397884D+00	0.314517D+00	0.401290D+00	0.310506D+00
0.3	0.346029D+00	0.295907D+00	0.350226D+00	0.292569D+00
0.4	0.299446D+00	0.274841D+00	0.304199D+00	0.272248D+00
0.5	0.258163D+00	0.252480D+00	0.263253D+00	0.250636D+00
0.6	0.221966D+00	0.229773D+00	0.227201D+00	0.228633D+00
0.7	0.190485D+00	0.207449D+00	0.195712D+00	0.206937D+00
0.8	0.163272D+00	0.186033D+00	0.168373D+00	0.186058D+00
0.9	0.139853D+00	0.165876D+00	0.144742D+00	0.166343D+00
1.0	0.119762D+00	0.147189D+00	0.124382D+00	0.148003D+00
1.1	0.102560D+00	0.130073D+00	0.106877D+00	0.131149D+00
1.2	0.878498D-01	0.114547D+00	0.918471D-01	0.115811D+00
1.3	0.752787D-01	0.100578D+00	0.789527D-01	0.101964D+00
1.4	0.645369D-01	0.880916D-01	0.678935D-01	0.895467D-01
1.5	0.553566D-01	0.769909D-01	0.584080D-01	0.784727D-01
1.6	0.475076D-01	0.671670D-01	0.502703D-01	0.686418D-01
1.7	0.407932D-01	0.585060D-01	0.432860D-01	0.599482D-01
1.8	0.350457D-01	0.508946D-01	0.372885D-01	0.522852D-01
1.9	0.301226D-01	0.442234D-01	0.321356D-01	0.455492D-01
2.0	0.259026D-01	0.383896D-01	0.277057D-01	0.396417D-01
2.1	0.222830D-01	0.332977D-01	0.238952D-01	0.344711D-01
2.2	0.191764D-01	0.288608D-01	0.206157D-01	0.299530D-01
2.3	0.165085D-01	0.249999D-01	0.177916D-01	0.260108D-01
2.4	0.142160D-01	0.216442D-01	0.153586D-01	0.225752D-01
2.5	0.122452D-01	0.187305D-01	0.132616D-01	0.195842D-01
2.6	0.105501D-01	0.162027D-01	0.114533D-01	0.169827D-01
2.7	0.909153D-02	0.140115D-01	0.989355D-02	0.147217D-01
2.8	0.783608D-02	0.121132D-01	0.854763D-02	0.127579D-01
2.9	0.675509D-02	0.104694D-01	0.738592D-02	0.110533D-01
3.0	0.582405D-02	0.904684D-02	0.638294D-02	0.957422D-02

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.62$		$\beta=0.61$	
	$X_M=0.792666 (-0.100910D+00)$		$X_M=0.787810 (-0.103579D+00)$	
	ϵ' 0.579398	ϵ'' 0.332674	ϵ' 0.580994	ϵ'' 0.327845
-3.0	0.999996D+00	0.144359D-02	0.999996D+00	0.147301D-02
-2.9	0.999994D+00	0.181736D-02	0.999993D+00	0.185440D-02
-2.8	0.999990D+00	0.228790D-02	0.999989D+00	0.233453D-02
-2.7	0.999984D+00	0.288024D-02	0.999983D+00	0.293894D-02
-2.6	0.999975D+00	0.362592D-02	0.999973D+00	0.369981D-02
-2.5	0.999960D+00	0.456459D-02	0.999957D+00	0.465758D-02
-2.4	0.999936D+00	0.574612D-02	0.999932D+00	0.586314D-02
-2.3	0.999899D+00	0.723324D-02	0.999892D+00	0.738045D-02
-2.2	0.999840D+00	0.910469D-02	0.999829D+00	0.928982D-02
-2.1	0.999747D+00	0.114593D-01	0.999729D+00	0.116920D-01
-2.0	0.999599D+00	0.144208D-01	0.999571D+00	0.147129D-01
-1.9	0.999366D+00	0.181436D-01	0.999320D+00	0.185098D-01
-1.8	0.998997D+00	0.228193D-01	0.998924D+00	0.232772D-01
-1.7	0.998414D+00	0.286839D-01	0.998300D+00	0.292542D-01
-1.6	0.997496D+00	0.360241D-01	0.997319D+00	0.367300D-01
-1.5	0.996057D+00	0.451810D-01	0.995780D+00	0.460465D-01
-1.4	0.993811D+00	0.565465D-01	0.993386D+00	0.575921D-01
-1.3	0.990336D+00	0.705456D-01	0.989693D+00	0.717807D-01
-1.2	0.985026D+00	0.875943D-01	0.984073D+00	0.890040D-01
-1.1	0.977050D+00	0.108020D+00	0.975679D+00	0.109548D+00
-1.0	0.965344D+00	0.131942D+00	0.963449D+00	0.133473D+00
-0.9	0.948667D+00	0.159123D+00	0.946176D+00	0.160468D+00
-0.8	0.925756D+00	0.188827D+00	0.922669D+00	0.189738D+00
-0.7	0.895557D+00	0.219763D+00	0.891991D+00	0.219968D+00
-0.6	0.857513D+00	0.250166D+00	0.853708D+00	0.249476D+00
-0.5	0.811773D+00	0.278022D+00	0.808069D+00	0.276199D+00
-0.4	0.759262D+00	0.301403D+00	0.756046D+00	0.298501D+00
-0.3	0.701576D+00	0.318788D+00	0.699205D+00	0.314956D+00
-0.2	0.640726D+00	0.329279D+00	0.639466D+00	0.324784D+00
-0.1	0.578837D+00	0.332674D+00	0.578830D+00	0.327841D+00
0.0	0.517868D+00	0.329383D+00	0.519126D+00	0.324544D+00
0.1	0.459432D+00	0.320275D+00	0.461860D+00	0.315720D+00
0.2	0.404706D+00	0.306476D+00	0.408133D+00	0.302427D+00
0.3	0.354431D+00	0.289200D+00	0.358646D+00	0.285799D+00
0.4	0.308966D+00	0.269610D+00	0.313748D+00	0.266927D+00
0.5	0.268368D+00	0.248735D+00	0.273509D+00	0.246778D+00
0.6	0.232478D+00	0.227429D+00	0.237795D+00	0.226162D+00
0.7	0.200996D+00	0.206360D+00	0.206338D+00	0.205715D+00
0.8	0.173547D+00	0.186020D+00	0.178795D+00	0.185916D+00
0.9	0.149719D+00	0.166751D+00	0.154785D+00	0.167097D+00
1.0	0.129102D+00	0.148766D+00	0.133924D+00	0.149476D+00
1.1	0.111304D+00	0.132183D+00	0.115842D+00	0.133174D+00
1.2	0.959611D-01	0.117042D+00	0.100194D+00	0.118239D+00
1.3	0.827475D-01	0.103328D+00	0.866659D-01	0.104667D+00
1.4	0.713726D-01	0.909897D-01	0.749776D-01	0.924180D-01
1.5	0.615818D-01	0.799511D-01	0.648815D-01	0.814240D-01
1.6	0.531534D-01	0.701211D-01	0.561610D-01	0.716030D-01
1.7	0.458959D-01	0.614017D-01	0.486274D-01	0.628648D-01
1.8	0.396442D-01	0.536929D-01	0.421176D-01	0.551162D-01
1.9	0.342566D-01	0.468966D-01	0.364904D-01	0.482647D-01
2.0	0.296113D-01	0.409191D-01	0.316243D-01	0.422211D-01
2.1	0.256041D-01	0.356724D-01	0.274148D-01	0.369013D-01
2.2	0.221457D-01	0.310751D-01	0.237717D-01	0.322269D-01
2.3	0.191597D-01	0.270527D-01	0.206176D-01	0.281258D-01
2.4	0.165803D-01	0.235378D-01	0.178858D-01	0.245325D-01
2.5	0.143513D-01	0.204697D-01	0.155191D-01	0.213875D-01
2.6	0.124244D-01	0.177941D-01	0.134678D-01	0.186376D-01
2.7	0.107581D-01	0.154627D-01	0.116896D-01	0.162352D-01
2.8	0.931668D-02	0.134325D-01	0.101475D-01	0.141379D-01
2.9	0.806952D-02	0.116658D-01	0.881000D-02	0.123080D-01
3.0	0.699015D-02	0.101290D-01	0.764960D-02	0.107124D-01

log X	$\beta=0.60$		$\beta=0.59$	
	$X_M=0.782992 (-0.106243D+00)$		$X_M=0.778214 (-0.108901D+00)$	
	ϵ' 0.582563	ϵ'' 0.322997	ϵ' 0.584107	ϵ'' 0.318130
-3.0	0.999995D+00	0.150456D-02	0.999995D+00	0.153843D-02
-2.9	0.999993D+00	0.189411D-02	0.999992D+00	0.193675D-02
-2.8	0.999988D+00	0.238451D-02	0.999987D+00	0.243819D-02
-2.7	0.999982D+00	0.300186D-02	0.999980D+00	0.306943D-02
-2.6	0.999971D+00	0.377901D-02	0.999968D+00	0.386404D-02
-2.5	0.999954D+00	0.475725D-02	0.999950D+00	0.486427D-02
-2.4	0.999927D+00	0.598856D-02	0.999921D+00	0.612322D-02
-2.3	0.999884D+00	0.753822D-02	0.999875D+00	0.770760D-02
-2.2	0.999816D+00	0.948821D-02	0.999801D+00	0.970116D-02
-2.1	0.999708D+00	0.119413D-01	0.999685D+00	0.122088D-01
-2.0	0.999538D+00	0.150258D-01	0.999502D+00	0.153615D-01
-1.9	0.999269D+00	0.189018D-01	0.999211D+00	0.193221D-01
-1.8	0.998844D+00	0.237670D-01	0.998753D+00	0.242916D-01
-1.7	0.998173D+00	0.298635D-01	0.998031D+00	0.305153D-01
-1.6	0.997120D+00	0.374829D-01	0.996898D+00	0.382866D-01
-1.5	0.995473D+00	0.469670D-01	0.995130D+00	0.479465D-01
-1.4	0.992915D+00	0.586996D-01	0.992391D+00	0.598724D-01
-1.3	0.988983D+00	0.730809D-01	0.988199D+00	0.744481D-01
-1.2	0.983029D+00	0.904749D-01	0.981884D+00	0.920069D-01
-1.1	0.974191D+00	0.111123D+00	0.972577D+00	0.112741D+00
-1.0	0.961416D+00	0.135022D+00	0.959236D+00	0.136583D+00
-0.9	0.943536D+00	0.161793D+00	0.940744D+00	0.163089D+00
-0.8	0.919444D+00	0.190585D+00	0.916079D+00	0.191360D+00
-0.7	0.888315D+00	0.220071D+00	0.884533D+00	0.220065D+00
-0.6	0.849836D+00	0.248563D+00	0.845904D+00	0.247573D+00
-0.5	0.804347D+00	0.274253D+00	0.800612D+00	0.272183D+00
-0.4	0.752851D+00	0.295494D+00	0.749681D+00	0.292384D+00
-0.3	0.696878D+00	0.311049D+00	0.694597D+00	0.307069D+00
-0.2	0.638258D+00	0.320243D+00	0.637100D+00	0.315657D+00
-0.1	0.578867D+00	0.322985D+00	0.578948D+00	0.318107D+00
0.0	0.520416D+00	0.319694D+00	0.521736D+00	0.314831D+00
0.1	0.464306D+00	0.311154D+00	0.466771D+00	0.306574D+00
0.2	0.411570D+00	0.298357D+00	0.415017D+00	0.294266D+00
0.3	0.362870D+00	0.282365D+00	0.367103D+00	0.278896D+00
0.4	0.318545D+00	0.264197D+00	0.323357D+00	0.261419D+00
0.5	0.278676D+00	0.244763D+00	0.283870D+00	0.242690D+00
0.6	0.243153D+00	0.224829D+00	0.248552D+00	0.223430D+00
0.7	0.211738D+00	0.205003D+00	0.217195D+00	0.204221D+00
0.8	0.184117D+00	0.185744D+00	0.189514D+00	0.185504D+00
0.9	0.159941D+00	0.167382D+00	0.165186D+00	0.167601D+00
1.0	0.138849D+00	0.150130D+00	0.143878D+00	0.150726D+00
1.1	0.120494D+00	0.134117D+00	0.125261D+00	0.135011D+00
1.2	0.104548D+00	0.119398D+00	0.109026D+00	0.120519D+00
1.3	0.907107D-01	0.105980D+00	0.948847D-01	0.107263D+00
1.4	0.787118D-01	0.938293D-01	0.825785D-01	0.952210D-01
1.5	0.683112D-01	0.828890D-01	0.718747D-01	0.843439D-01
1.6	0.592974D-01	0.730855D-01	0.625669D-01	0.745664D-01
1.7	0.514852D-01	0.643360D-01	0.544740D-01	0.658132D-01
1.8	0.447135D-01	0.565539D-01	0.474370D-01	0.580042D-01
1.9	0.388422D-01	0.496523D-01	0.413172D-01	0.510582D-01
2.0	0.337501D-01	0.435469D-01	0.359942D-01	0.448955D-01
2.1	0.293325D-01	0.381573D-01	0.313630D-01	0.394397D-01
2.2	0.254988D-01	0.334083D-01	0.273327D-01	0.346188D-01
2.3	0.221707D-01	0.292302D-01	0.238245D-01	0.303657D-01
2.4	0.192806D-01	0.255594D-01	0.207699D-01	0.266187D-01
2.5	0.167701D-01	0.223380D-01	0.181097D-01	0.233217D-01
2.6	0.145887D-01	0.195139D-01	0.157923D-01	0.204235D-01
2.7	0.126929D-01	0.170401D-01	0.137731D-01	0.178782D-01
2.8	0.110448D-01	0.148750D-01	0.120134D-01	0.156447D-01
2.9	0.961176D-02	0.129811D-01	0.104795D-01	0.136859D-01
3.0	0.836549D-02	0.113254D-01	0.914234D-02	0.119692D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.58$		$\beta=0.57$	
	$X_M=0.773475 (-0.111554D+00)$		$X_M=0.768776 (-0.114200D+00)$	
	ϵ'	ϵ''	ϵ'	ϵ''
	0.585626	0.313244	0.587120	0.308339
-3.0	0.999995D+00	0.157486D-02	0.999994D+00	0.161412D-02
-2.9	0.999991D+00	0.198261D-02	0.999991D+00	0.203204D-02
-2.8	0.999986D+00	0.249592D-02	0.999985D+00	0.255814D-02
-2.7	0.999978D+00	0.314210D-02	0.999977D+00	0.322041D-02
-2.6	0.999966D+00	0.395551D-02	0.999963D+00	0.405407D-02
-2.5	0.999946D+00	0.497938D-02	0.999941D+00	0.510340D-02
-2.4	0.999914D+00	0.626804D-02	0.999907D+00	0.642407D-02
-2.3	0.999864D+00	0.788975D-02	0.999852D+00	0.808597D-02
-2.2	0.999785D+00	0.993011D-02	0.999766D+00	0.101767D-01
-2.1	0.999659D+00	0.124963D-01	0.999629D+00	0.128059D-01
-2.0	0.999460D+00	0.157221D-01	0.999413D+00	0.161102D-01
-1.9	0.999146D+00	0.197734D-01	0.999072D+00	0.202586D-01
-1.8	0.998651D+00	0.248544D-01	0.998535D+00	0.254589D-01
-1.7	0.997871D+00	0.312133D-01	0.997690D+00	0.319617D-01
-1.6	0.996649D+00	0.391451D-01	0.996368D+00	0.400630D-01
-1.5	0.994746D+00	0.489891D-01	0.994315D+00	0.500991D-01
-1.4	0.991808D+00	0.611140D-01	0.991157D+00	0.624280D-01
-1.3	0.987331D+00	0.758847D-01	0.986371D+00	0.773919D-01
-1.2	0.980629D+00	0.935994D-01	0.979254D+00	0.952507D-01
-1.1	0.970827D+00	0.114398D+00	0.968931D+00	0.116090D+00
-1.0	0.956903D+00	0.138150D+00	0.954409D+00	0.139713D+00
-0.9	0.937796D+00	0.164346D+00	0.934688D+00	0.165556D+00
-0.8	0.912576D+00	0.192052D+00	0.908936D+00	0.192653D+00
-0.7	0.880648D+00	0.219943D+00	0.876666D+00	0.219700D+00
-0.6	0.841916D+00	0.246452D+00	0.837879D+00	0.245199D+00
-0.5	0.796868D+00	0.269989D+00	0.793120D+00	0.267671D+00
-0.4	0.746537D+00	0.289172D+00	0.743424D+00	0.285861D+00
-0.3	0.692364D+00	0.303017D+00	0.690178D+00	0.298897D+00
-0.2	0.635992D+00	0.311030D+00	0.634936D+00	0.306362D+00
-0.1	0.579072D+00	0.313207D+00	0.579238D+00	0.308286D+00
0.0	0.523086D+00	0.309957D+00	0.524466D+00	0.305070D+00
0.1	0.469253D+00	0.301982D+00	0.471752D+00	0.297377D+00
0.2	0.418475D+00	0.290153D+00	0.421942D+00	0.286019D+00
0.3	0.371345D+00	0.275394D+00	0.375596D+00	0.271856D+00
0.4	0.328184D+00	0.258595D+00	0.333025D+00	0.255721D+00
0.5	0.289089D+00	0.240557D+00	0.294335D+00	0.238365D+00
0.6	0.253993D+00	0.221964D+00	0.259474D+00	0.220430D+00
0.7	0.222711D+00	0.203368D+00	0.228284D+00	0.202442D+00
0.8	0.194986D+00	0.185193D+00	0.200533D+00	0.184810D+00
0.9	0.170523D+00	0.167753D+00	0.175951D+00	0.167837D+00
1.0	0.149012D+00	0.151262D+00	0.154252D+00	0.151734D+00
1.1	0.130145D+00	0.135853D+00	0.135147D+00	0.136640D+00
1.2	0.113629D+00	0.121596D+00	0.118360D+00	0.122628D+00
1.3	0.991907D-01	0.108514D+00	0.103632D+00	0.109729D+00
1.4	0.865813D-01	0.965903D-01	0.907234D-01	0.979343D-01
1.5	0.755758D-01	0.857860D-01	0.794188D-01	0.872125D-01
1.6	0.659741D-01	0.760433D-01	0.695234D-01	0.775138D-01
1.7	0.575986D-01	0.672943D-01	0.608641D-01	0.687772D-01
1.8	0.502933D-01	0.594654D-01	0.532877D-01	0.609356D-01
1.9	0.439210D-01	0.524809D-01	0.466592D-01	0.539188D-01
2.0	0.383621D-01	0.462658D-01	0.408597D-01	0.476567D-01
2.1	0.335119D-01	0.407478D-01	0.357853D-01	0.420807D-01
2.2	0.292793D-01	0.358581D-01	0.313447D-01	0.371255D-01
2.3	0.255850D-01	0.315322D-01	0.274582D-01	0.327294D-01
2.4	0.223598D-01	0.277106D-01	0.240562D-01	0.288351D-01
2.5	0.195436D-01	0.243388D-01	0.210779D-01	0.253898D-01
2.6	0.170840D-01	0.213670D-01	0.184700D-01	0.223450D-01
2.7	0.149356D-01	0.187502D-01	0.161862D-01	0.196567D-01
2.8	0.130586D-01	0.164478D-01	0.141860D-01	0.172854D-01
2.9	0.114184D-01	0.144236D-01	0.124338D-01	0.151950D-01
3.0	0.998502D-02	0.126449D-01	0.108987D-01	0.133536D-01

log X	$\beta=0.56$		$\beta=0.55$	
	$X_M=0.764116 (-0.116841D+00)$		$X_M=0.759496 (-0.119475D+00)$	
	ϵ' 0.588589	ϵ'' 0.303416	ϵ' 0.590033	ϵ'' 0.298474
-3.0	0.999994D+00	0.165652D-02	0.999993D+00	0.170238D-02
-2.9	0.999990D+00	0.208540D-02	0.999989D+00	0.214314D-02
-2.8	0.999984D+00	0.262531D-02	0.999982D+00	0.269799D-02
-2.7	0.999974D+00	0.330496D-02	0.999972D+00	0.339644D-02
-2.6	0.999959D+00	0.416048D-02	0.999956D+00	0.427561D-02
-2.5	0.999936D+00	0.523730D-02	0.999930D+00	0.538216D-02
-2.4	0.999898D+00	0.659251D-02	0.999888D+00	0.677470D-02
-2.3	0.999839D+00	0.829776D-02	0.999823D+00	0.852680D-02
-2.2	0.999745D+00	0.104428D-01	0.999720D+00	0.107305D-01
-2.1	0.999596D+00	0.131399D-01	0.999557D+00	0.135008D-01
-2.0	0.999360D+00	0.165286D-01	0.999299D+00	0.169804D-01
-1.9	0.998988D+00	0.207813D-01	0.998893D+00	0.213452D-01
-1.8	0.998403D+00	0.261090D-01	0.998253D+00	0.268092D-01
-1.7	0.997484D+00	0.327648D-01	0.997251D+00	0.336276D-01
-1.6	0.996051D+00	0.410450D-01	0.995691D+00	0.420958D-01
-1.5	0.993830D+00	0.512820D-01	0.993284D+00	0.525386D-01
-1.4	0.990431D+00	0.638174D-01	0.989617D+00	0.652849D-01
-1.3	0.985307D+00	0.789706D-01	0.984129D+00	0.806207D-01
-1.2	0.977747D+00	0.969582D-01	0.976096D+00	0.987182D-01
-1.1	0.966879D+00	0.117809D+00	0.964662D+00	0.119548D+00
-1.0	0.951746D+00	0.141264D+00	0.948910D+00	0.142791D+00
-0.9	0.931419D+00	0.166707D+00	0.927986D+00	0.167788D+00
-0.8	0.905160D+00	0.193154D+00	0.901252D+00	0.193546D+00
-0.7	0.872590D+00	0.219328D+00	0.868427D+00	0.218823D+00
-0.6	0.833798D+00	0.243809D+00	0.829678D+00	0.242283D+00
-0.5	0.789373D+00	0.265229D+00	0.785631D+00	0.262664D+00
-0.4	0.740344D+00	0.282451D+00	0.737300D+00	0.278946D+00
-0.3	0.688041D+00	0.294709D+00	0.685954D+00	0.290457D+00
-0.2	0.633929D+00	0.301655D+00	0.632972D+00	0.296910D+00
-0.1	0.579445D+00	0.303346D+00	0.579693D+00	0.298385D+00
0.0	0.525874D+00	0.300171D+00	0.527309D+00	0.295260D+00
0.1	0.474269D+00	0.292757D+00	0.476801D+00	0.288123D+00
0.2	0.425419D+00	0.281861D+00	0.428906D+00	0.277679D+00
0.3	0.379857D+00	0.268283D+00	0.384126D+00	0.264673D+00
0.4	0.337882D+00	0.252799D+00	0.342754D+00	0.249827D+00
0.5	0.299607D+00	0.236112D+00	0.304905D+00	0.233797D+00
0.6	0.264997D+00	0.218827D+00	0.270561D+00	0.217154D+00
0.7	0.233916D+00	0.201444D+00	0.239605D+00	0.200370D+00
0.8	0.206156D+00	0.184353D+00	0.211854D+00	0.183819D+00
0.9	0.181472D+00	0.167849D+00	0.187085D+00	0.167787D+00
1.0	0.159598D+00	0.152142D+00	0.165053D+00	0.152481D+00
1.1	0.140268D+00	0.137369D+00	0.145511D+00	0.138039D+00
1.2	0.123221D+00	0.123613D+00	0.128214D+00	0.124545D+00
1.3	0.108210D+00	0.110906D+00	0.112929D+00	0.112041D+00
1.4	0.950085D-01	0.992501D-01	0.994399D-01	0.100535D+00
1.5	0.834076D-01	0.886206D-01	0.875463D-01	0.900074D-01
1.6	0.732194D-01	0.789751D-01	0.770669D-01	0.804245D-01
1.7	0.642755D-01	0.702595D-01	0.678381D-01	0.717386D-01
1.8	0.564259D-01	0.624128D-01	0.597134D-01	0.638945D-01
1.9	0.495376D-01	0.553702D-01	0.525623D-01	0.568332D-01
2.0	0.434933D-01	0.490665D-01	0.462689D-01	0.504939D-01
2.1	0.381894D-01	0.434372D-01	0.407309D-01	0.448162D-01
2.2	0.335352D-01	0.384203D-01	0.358575D-01	0.397416D-01
2.3	0.294506D-01	0.339569D-01	0.315690D-01	0.352141D-01
2.4	0.258657D-01	0.299920D-01	0.277949D-01	0.311811D-01
2.5	0.227189D-01	0.264746D-01	0.244735D-01	0.275933D-01
2.6	0.199565D-01	0.233576D-01	0.215501D-01	0.244054D-01
2.7	0.175312D-01	0.205984D-01	0.189769D-01	0.215758D-01
2.8	0.154016D-01	0.181580D-01	0.167118D-01	0.190665D-01
2.9	0.135315D-01	0.160012D-01	0.147178D-01	0.168429D-01
3.0	0.118891D-01	0.140962D-01	0.129622D-01	0.148740D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.54$		$\beta=0.53$	
	$X_M=0.754914 (-0.122102D+00)$		$X_M=0.750372 (-0.124723D+00)$	
	ϵ' 0.591453	ϵ'' 0.293513	ϵ' 0.592848	ϵ'' 0.288535
-3.0	0.999992D+00	0.175212D-02	0.999991D+00	0.180618D-02
-2.9	0.999988D+00	0.220575D-02	0.999986D+00	0.227380D-02
-2.8	0.999981D+00	0.277680D-02	0.999978D+00	0.286245D-02
-2.7	0.999969D+00	0.349563D-02	0.999966D+00	0.360342D-02
-2.6	0.999951D+00	0.440043D-02	0.999946D+00	0.453607D-02
-2.5	0.999922D+00	0.553919D-02	0.999914D+00	0.570982D-02
-2.4	0.999877D+00	0.697220D-02	0.999864D+00	0.718675D-02
-2.3	0.999805D+00	0.877502D-02	0.999785D+00	0.904462D-02
-2.2	0.999692D+00	0.110422D-01	0.999659D+00	0.113806D-01
-2.1	0.999512D+00	0.138916D-01	0.999461D+00	0.143156D-01
-2.0	0.999229D+00	0.174693D-01	0.999148D+00	0.179991D-01
-1.9	0.998782D+00	0.219545D-01	0.998656D+00	0.226138D-01
-1.8	0.998081D+00	0.275642D-01	0.997883D+00	0.283795D-01
-1.7	0.996984D+00	0.345553D-01	0.996679D+00	0.355535D-01
-1.6	0.995282D+00	0.432208D-01	0.994816D+00	0.444253D-01
-1.5	0.992667D+00	0.538769D-01	0.991970D+00	0.552995D-01
-1.4	0.988707D+00	0.668328D-01	0.987687D+00	0.684626D-01
-1.3	0.982823D+00	0.823412D-01	0.981378D+00	0.841298D-01
-1.2	0.974290D+00	0.100526D+00	0.972317D+00	0.102374D+00
-1.1	0.962270D+00	0.121298D+00	0.959694D+00	0.123050D+00
-1.0	0.945895D+00	0.144285D+00	0.942696D+00	0.145733D+00
-0.9	0.924391D+00	0.168789D+00	0.920632D+00	0.169699D+00
-0.8	0.897215D+00	0.193819D+00	0.893054D+00	0.193967D+00
-0.7	0.864182D+00	0.218180D+00	0.859861D+00	0.217393D+00
-0.6	0.825526D+00	0.240617D+00	0.821347D+00	0.238811D+00
-0.5	0.781899D+00	0.259977D+00	0.778181D+00	0.257171D+00
-0.4	0.734293D+00	0.275348D+00	0.731326D+00	0.271659D+00
-0.3	0.683918D+00	0.286142D+00	0.681931D+00	0.281767D+00
-0.2	0.632065D+00	0.292129D+00	0.631206D+00	0.287312D+00
-0.1	0.579980D+00	0.293405D+00	0.580307D+00	0.288407D+00
0.0	0.528772D+00	0.290337D+00	0.530261D+00	0.285400D+00
0.1	0.479349D+00	0.283474D+00	0.481913D+00	0.278809D+00
0.2	0.432402D+00	0.273473D+00	0.435908D+00	0.269243D+00
0.3	0.388405D+00	0.261026D+00	0.392694D+00	0.257342D+00
0.4	0.347641D+00	0.246804D+00	0.352543D+00	0.243730D+00
0.5	0.310229D+00	0.231420D+00	0.315580D+00	0.228980D+00
0.6	0.276166D+00	0.215410D+00	0.281813D+00	0.213594D+00
0.7	0.245353D+00	0.199220D+00	0.251160D+00	0.197992D+00
0.8	0.217629D+00	0.183208D+00	0.223480D+00	0.182518D+00
0.9	0.192791D+00	0.167651D+00	0.198592D+00	0.167436D+00
1.0	0.170618D+00	0.152750D+00	0.176292D+00	0.152945D+00
1.1	0.150877D+00	0.138645D+00	0.156367D+00	0.139185D+00
1.2	0.133342D+00	0.125424D+00	0.138606D+00	0.126244D+00
1.3	0.117792D+00	0.113132D+00	0.122800D+00	0.114175D+00
1.4	0.104021D+00	0.101784D+00	0.108756D+00	0.102996D+00
1.5	0.918391D-01	0.913696D-01	0.962903D-01	0.927039D-01
1.6	0.810706D-01	0.818590D-01	0.852353D-01	0.832753D-01
1.7	0.715571D-01	0.732116D-01	0.754380D-01	0.746758D-01
1.8	0.631560D-01	0.653784D-01	0.667597D-01	0.668619D-01
1.9	0.557394D-01	0.583055D-01	0.590754D-01	0.597849D-01
2.0	0.491934D-01	0.519369D-01	0.522733D-01	0.533935D-01
2.1	0.434164D-01	0.462162D-01	0.462532D-01	0.476355D-01
2.2	0.383187D-01	0.410884D-01	0.409259D-01	0.424592D-01
2.3	0.338204D-01	0.365003D-01	0.362123D-01	0.378146D-01
2.4	0.298511D-01	0.324019D-01	0.320418D-01	0.336538D-01
2.5	0.263487D-01	0.287458D-01	0.283520D-01	0.299319D-01
2.6	0.232580D-01	0.254884D-01	0.250875D-01	0.266066D-01
2.7	0.205305D-01	0.225892D-01	0.221993D-01	0.236391D-01
2.8	0.181236D-01	0.200114D-01	0.196440D-01	0.209934D-01
2.9	0.159993D-01	0.177211D-01	0.173832D-01	0.186365D-01
3.0	0.141245D-01	0.156878D-01	0.153829D-01	0.165386D-01

log X	$\beta=0.52$		$\beta=0.51$	
	$X_M=0.745870 \begin{smallmatrix} \varepsilon' \\ \varepsilon'' \end{smallmatrix} (-0.127337D+00)$		$X_M=0.741406 \begin{smallmatrix} \varepsilon' \\ \varepsilon'' \end{smallmatrix} (-0.129944D+00)$	
	0.594219	0.283537	0.595566	0.278522
-3.0	0.999990D+00	0.186508D-02	0.999989D+00	0.192941D-02
-2.9	0.999985D+00	0.234793D-02	0.999983D+00	0.242891D-02
-2.8	0.999976D+00	0.295576D-02	0.999973D+00	0.305768D-02
-2.7	0.999962D+00	0.372085D-02	0.999958D+00	0.384911D-02
-2.6	0.999940D+00	0.468382D-02	0.999933D+00	0.484518D-02
-2.5	0.999905D+00	0.589567D-02	0.999893D+00	0.609860D-02
-2.4	0.999849D+00	0.742039D-02	0.999831D+00	0.767545D-02
-2.3	0.999761D+00	0.933811D-02	0.999733D+00	0.965837D-02
-2.2	0.999621D+00	0.117488D-01	0.999577D+00	0.121503D-01
-2.1	0.999401D+00	0.147766D-01	0.999331D+00	0.152789D-01
-2.0	0.999054D+00	0.185745D-01	0.998945D+00	0.192005D-01
-1.9	0.998509D+00	0.233286D-01	0.998338D+00	0.241044D-01
-1.8	0.997655D+00	0.292607D-01	0.997391D+00	0.302155D-01
-1.7	0.996328D+00	0.366282D-01	0.995924D+00	0.377854D-01
-1.6	0.994285D+00	0.457145D-01	0.993676D+00	0.470935D-01
-1.5	0.991180D+00	0.568100D-01	0.990285D+00	0.584114D-01
-1.4	0.986545D+00	0.701747D-01	0.985265D+00	0.719685D-01
-1.3	0.979778D+00	0.859831D-01	0.978011D+00	0.878958D-01
-1.2	0.970165D+00	0.104256D+00	0.967821D+00	0.106161D+00
-1.1	0.956926D+00	0.124792D+00	0.953958D+00	0.126512D+00
-1.0	0.939311D+00	0.147122D+00	0.935737D+00	0.148441D+00
-0.9	0.916713D+00	0.170506D+00	0.912634D+00	0.171200D+00
-0.8	0.888773D+00	0.193980D+00	0.884378D+00	0.193852D+00
-0.7	0.855471D+00	0.216460D+00	0.851017D+00	0.215376D+00
-0.6	0.817147D+00	0.236865D+00	0.812932D+00	0.234778D+00
-0.5	0.774479D+00	0.254245D+00	0.770799D+00	0.251203D+00
-0.4	0.728400D+00	0.267880D+00	0.725518D+00	0.264015D+00
-0.3	0.679996D+00	0.277333D+00	0.678112D+00	0.272843D+00
-0.2	0.630395D+00	0.282462D+00	0.629631D+00	0.277579D+00
-0.1	0.580671D+00	0.283390D+00	0.581072D+00	0.278355D+00
0.0	0.531775D+00	0.280451D+00	0.533314D+00	0.275489D+00
0.1	0.484492D+00	0.274128D+00	0.487085D+00	0.269431D+00
0.2	0.439423D+00	0.264987D+00	0.442947D+00	0.260705D+00
0.3	0.396991D+00	0.253619D+00	0.401298D+00	0.249858D+00
0.4	0.357461D+00	0.240605D+00	0.362394D+00	0.237427D+00
0.5	0.320958D+00	0.226477D+00	0.326361D+00	0.223908D+00
0.6	0.287500D+00	0.211704D+00	0.293229D+00	0.209740D+00
0.7	0.257024D+00	0.196685D+00	0.262947D+00	0.195298D+00
0.8	0.229407D+00	0.181746D+00	0.235411D+00	0.180891D+00
0.9	0.204486D+00	0.167142D+00	0.210475D+00	0.166765D+00
1.0	0.182077D+00	0.153065D+00	0.187974D+00	0.153106D+00
1.1	0.161984D+00	0.139655D+00	0.167727D+00	0.140053D+00
1.2	0.144009D+00	0.127004D+00	0.149552D+00	0.127699D+00
1.3	0.127958D+00	0.115166D+00	0.133268D+00	0.116102D+00
1.4	0.113648D+00	0.104167D+00	0.118700D+00	0.105292D+00
1.5	0.100904D+00	0.940068D-01	0.105684D+00	0.952746D-01
1.6	0.895660D-01	0.846701D-01	0.940677D-01	0.860399D-01
1.7	0.794864D-01	0.761278D-01	0.837079D-01	0.775643D-01
1.8	0.705306D-01	0.683419D-01	0.744750D-01	0.698153D-01
1.9	0.625769D-01	0.612688D-01	0.662507D-01	0.627543D-01
2.0	0.555157D-01	0.548617D-01	0.589278D-01	0.563388D-01
2.1	0.492484D-01	0.490724D-01	0.524098D-01	0.505247D-01
2.2	0.436869D-01	0.438528D-01	0.466095D-01	0.452673D-01
2.3	0.387525D-01	0.391558D-01	0.414490D-01	0.405226D-01
2.4	0.343748D-01	0.349362D-01	0.368584D-01	0.362481D-01
2.5	0.304914D-01	0.311511D-01	0.327753D-01	0.324028D-01
2.6	0.270467D-01	0.277600D-01	0.291440D-01	0.289483D-01
2.7	0.239912D-01	0.247255D-01	0.259145D-01	0.258486D-01
2.8	0.212810D-01	0.220128D-01	0.230427D-01	0.230700D-01
2.9	0.188770D-01	0.195898D-01	0.204890D-01	0.205815D-01
3.0	0.167448D-01	0.174274D-01	0.182182D-01	0.183548D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.50$ $X_M=0.736981 (-0.132544D+00)$		$\beta=0.49$ $X_M=0.732594 (-0.135137D+00)$	
	ϵ' 0.596889	ϵ'' 0.273488	ϵ' 0.598188	ϵ'' 0.268436
-3.0	0.999988D+00	0.199988D-02	0.999986D+00	0.207729D-02
-2.9	0.999981D+00	0.251761D-02	0.999978D+00	0.261505D-02
-2.8	0.999970D+00	0.316931D-02	0.999966D+00	0.329193D-02
-2.7	0.999952D+00	0.398957D-02	0.999946D+00	0.414385D-02
-2.6	0.999924D+00	0.502187D-02	0.999914D+00	0.521592D-02
-2.5	0.999880D+00	0.632077D-02	0.999864D+00	0.656470D-02
-2.4	0.999810D+00	0.795460D-02	0.999785D+00	0.826097D-02
-2.3	0.999700D+00	0.100087D-01	0.999660D+00	0.103930D-01
-2.2	0.999525D+00	0.125893D-01	0.999463D+00	0.130703D-01
-2.1	0.999249D+00	0.158273D-01	0.999152D+00	0.164275D-01
-2.0	0.998816D+00	0.198829D-01	0.998665D+00	0.206279D-01
-1.9	0.998138D+00	0.249479D-01	0.997903D+00	0.258660D-01
-1.8	0.997083D+00	0.312469D-01	0.996724D+00	0.323656D-01
-1.7	0.995456D+00	0.390316D-01	0.994914D+00	0.403731D-01
-1.6	0.992979D+00	0.485673D-01	0.992179D+00	0.501401D-01
-1.5	0.989270D+00	0.601055D-01	0.988120D+00	0.618931D-01
-1.4	0.983833D+00	0.738417D-01	0.982231D+00	0.757905D-01
-1.3	0.976061D+00	0.898611D-01	0.973914D+00	0.918704D-01
-1.2	0.965275D+00	0.108080D+00	0.962517D+00	0.109998D+00
-1.1	0.950784D+00	0.128197D+00	0.947400D+00	0.129832D+00
-1.0	0.931974D+00	0.149677D+00	0.928021D+00	0.150815D+00
-0.9	0.908401D+00	0.171770D+00	0.904018D+00	0.172206D+00
-0.8	0.879876D+00	0.193576D+00	0.875273D+00	0.193147D+00
-0.7	0.846507D+00	0.214140D+00	0.841948D+00	0.212748D+00
-0.6	0.808706D+00	0.232552D+00	0.804475D+00	0.230185D+00
-0.5	0.767144D+00	0.248046D+00	0.763516D+00	0.244777D+00
-0.4	0.722681D+00	0.260067D+00	0.719889D+00	0.256036D+00
-0.3	0.676278D+00	0.268298D+00	0.674496D+00	0.263701D+00
-0.2	0.628914D+00	0.272665D+00	0.628243D+00	0.267720D+00
-0.1	0.581510D+00	0.273302D+00	0.581983D+00	0.268232D+00
0.0	0.534878D+00	0.270514D+00	0.536465D+00	0.265525D+00
0.1	0.489693D+00	0.264717D+00	0.492315D+00	0.259985D+00
0.2	0.446480D+00	0.256396D+00	0.450022D+00	0.252060D+00
0.3	0.405615D+00	0.246057D+00	0.409941D+00	0.242216D+00
0.4	0.367342D+00	0.234196D+00	0.372306D+00	0.230912D+00
0.5	0.331792D+00	0.221274D+00	0.337248D+00	0.218574D+00
0.6	0.298999D+00	0.207701D+00	0.304810D+00	0.205586D+00
0.7	0.268929D+00	0.193829D+00	0.274969D+00	0.192277D+00
0.8	0.241491D+00	0.179952D+00	0.247649D+00	0.178925D+00
0.9	0.216560D+00	0.166303D+00	0.222740D+00	0.165755D+00
1.0	0.193984D+00	0.153066D+00	0.200108D+00	0.152942D+00
1.1	0.173600D+00	0.140376D+00	0.179602D+00	0.140620D+00
1.2	0.155238D+00	0.128327D+00	0.161070D+00	0.128883D+00
1.3	0.138732D+00	0.116979D+00	0.144353D+00	0.117794D+00
1.4	0.123916D+00	0.106368D+00	0.129300D+00	0.107391D+00
1.5	0.110636D+00	0.965035D-01	0.115763D+00	0.976895D-01
1.6	0.987454D-01	0.873809D-01	0.103604D+00	0.886891D-01
1.7	0.881082D-01	0.789819D-01	0.926932D-01	0.803765D-01
1.8	0.785992D-01	0.712790D-01	0.829097D-01	0.727292D-01
1.9	0.701036D-01	0.642384D-01	0.741430D-01	0.657179D-01
2.0	0.625172D-01	0.578222D-01	0.662914D-01	0.593089D-01
2.1	0.557451D-01	0.519900D-01	0.592626D-01	0.534659D-01
2.2	0.497019D-01	0.467008D-01	0.529727D-01	0.481511D-01
2.3	0.443104D-01	0.419135D-01	0.473455D-01	0.433267D-01
2.4	0.395013D-01	0.375882D-01	0.423126D-01	0.389552D-01
2.5	0.352125D-01	0.336862D-01	0.378121D-01	0.350003D-01
2.6	0.313880D-01	0.301710D-01	0.337884D-01	0.314275D-01
2.7	0.279781D-01	0.270081D-01	0.301913D-01	0.282038D-01
2.8	0.249380D-01	0.241651D-01	0.269762D-01	0.252982D-01
2.9	0.222278D-01	0.216122D-01	0.241026D-01	0.226820D-01
3.0	0.198118D-01	0.193216D-01	0.215345D-01	0.203283D-01

log X	$\beta=0.48$		$\beta=0.47$	
	$X_M=0.728246 (-0.137722D+00)$		$X_M=0.723936 (-0.140300D+00)$	
	ε' 0.599464	ε'' 0.263366	ε' 0.600717	ε'' 0.258278
-3.0	0.999985D+00	0.216261D-02	0.999982D+00	0.225693D-02
-2.9	0.999975D+00	0.272242D-02	0.999972D+00	0.284112D-02
-2.8	0.999961D+00	0.342704D-02	0.999955D+00	0.357640D-02
-2.7	0.999938D+00	0.431382D-02	0.999929D+00	0.450169D-02
-2.6	0.999903D+00	0.542966D-02	0.999888D+00	0.566585D-02
-2.5	0.999846D+00	0.683330D-02	0.999823D+00	0.713001D-02
-2.4	0.999756D+00	0.859818D-02	0.999720D+00	0.897044D-02
-2.3	0.999614D+00	0.108157D-01	0.999557D+00	0.112818D-01
-2.2	0.999389D+00	0.135987D-01	0.999301D+00	0.141807D-01
-2.1	0.999037D+00	0.170856D-01	0.998899D+00	0.178089D-01
-2.0	0.998488D+00	0.214430D-01	0.998272D+00	0.223356D-01
-1.9	0.997627D+00	0.268662D-01	0.997299D+00	0.279568D-01
-1.8	0.996303D+00	0.335778D-01	0.995809D+00	0.348911D-01
-1.7	0.994286D+00	0.418160D-01	0.993555D+00	0.433658D-01
-1.6	0.991261D+00	0.518151D-01	0.990208D+00	0.535946D-01
-1.5	0.986817D+00	0.637734D-01	0.985343D+00	0.657438D-01
-1.4	0.980444D+00	0.778093D-01	0.978454D+00	0.798901D-01
-1.3	0.971556D+00	0.939132D-01	0.968974D+00	0.959771D-01
-1.2	0.959536D+00	0.111904D+00	0.956325D+00	0.113781D+00
-1.1	0.943801D+00	0.131404D+00	0.939985D+00	0.132896D+00
-1.0	0.923881D+00	0.151843D+00	0.919555D+00	0.152749D+00
-0.9	0.899489D+00	0.172499D+00	0.894821D+00	0.172639D+00
-0.8	0.870575D+00	0.192557D+00	0.865791D+00	0.191804D+00
-0.7	0.837345D+00	0.211200D+00	0.832705D+00	0.209494D+00
-0.6	0.800245D+00	0.227681D+00	0.796019D+00	0.225040D+00
-0.5	0.759919D+00	0.241397D+00	0.756355D+00	0.237910D+00
-0.4	0.717145D+00	0.251927D+00	0.714448D+00	0.247741D+00
-0.3	0.672764D+00	0.259052D+00	0.671083D+00	0.254355D+00
-0.2	0.627617D+00	0.262745D+00	0.627036D+00	0.257742D+00
-0.1	0.582490D+00	0.263145D+00	0.583031D+00	0.258041D+00
0.0	0.538075D+00	0.260522D+00	0.539708D+00	0.255050D+00
0.1	0.494951D+00	0.255235D+00	0.497600D+00	0.250466D+00
0.2	0.453573D+00	0.247695D+00	0.457133D+00	0.243303D+00
0.3	0.414276D+00	0.238334D+00	0.418621D+00	0.234411D+00
0.4	0.377286D+00	0.227573D+00	0.382281D+00	0.224180D+00
0.5	0.342731D+00	0.215808D+00	0.348240D+00	0.212973D+00
0.6	0.310662D+00	0.203393D+00	0.316555D+00	0.201123D+00
0.7	0.281067D+00	0.190640D+00	0.287223D+00	0.188918D+00
0.8	0.253883D+00	0.177811D+00	0.260195D+00	0.176605D+00
0.9	0.229016D+00	0.165118D+00	0.235388D+00	0.164389D+00
1.0	0.206345D+00	0.152732D+00	0.212698D+00	0.152431D+00
1.1	0.185736D+00	0.140782D+00	0.192003D+00	0.140859D+00
1.2	0.167047D+00	0.129364D+00	0.173174D+00	0.129766D+00
1.3	0.150134D+00	0.118542D+00	0.156078D+00	0.119220D+00
1.4	0.134854D+00	0.108357D+00	0.140583D+00	0.109262D+00
1.5	0.121070D+00	0.988284D-01	0.126560D+00	0.999159D-01
1.6	0.108649D+00	0.899604D-01	0.113885D+00	0.911904D-01
1.7	0.974686D-01	0.817443D-01	0.102441D+00	0.830809D-01
1.8	0.874132D-01	0.741621D-01	0.921165D-01	0.755737D-01
1.9	0.783759D-01	0.671891D-01	0.828100D-01	0.686483D-01
2.0	0.702584D-01	0.607958D-01	0.744264D-01	0.622792D-01
2.1	0.629707D-01	0.549494D-01	0.668781D-01	0.564373D-01
2.2	0.564307D-01	0.496158D-01	0.600852D-01	0.510919D-01
2.3	0.505636D-01	0.447600D-01	0.539743D-01	0.462111D-01
2.4	0.453018D-01	0.403473D-01	0.484789D-01	0.417627D-01
2.5	0.405840D-01	0.363439D-01	0.435382D-01	0.377152D-01
2.6	0.363547D-01	0.327168D-01	0.390975D-01	0.340379D-01
2.7	0.325641D-01	0.294351D-01	0.351069D-01	0.307012D-01
2.8	0.291672D-01	0.264690D-01	0.315215D-01	0.276773D-01
2.9	0.261233D-01	0.237911D-01	0.283005D-01	0.249395D-01
3.0	0.233962D-01	0.213754D-01	0.254074D-01	0.224631D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.46$ $X_M=0.719663 (-0.142871D+00)$		$\beta=0.45$ $X_M=0.715429 (-0.145434D+00)$	
	ϵ' 0.601946	ϵ'' 0.253172	ϵ' 0.603152	ϵ'' 0.248047
-3.0	0.999979D+00	0.236159D-02	0.999976D+00	0.247816D-02
-2.9	0.999967D+00	0.297283D-02	0.999962D+00	0.311950D-02
-2.8	0.999948D+00	0.374209D-02	0.999940D+00	0.392659D-02
-2.7	0.999918D+00	0.471007D-02	0.999905D+00	0.494203D-02
-2.6	0.999871D+00	0.592773D-02	0.999849D+00	0.621914D-02
-2.5	0.999795D+00	0.745882D-02	0.999762D+00	0.782447D-02
-2.4	0.999677D+00	0.938266D-02	0.999623D+00	0.984061D-02
-2.3	0.999489D+00	0.117974D-01	0.999406D+00	0.123693D-01
-2.2	0.999194D+00	0.148232D-01	0.999064D+00	0.155330D-01
-2.1	0.998733D+00	0.186056D-01	0.998532D+00	0.194835D-01
-2.0	0.998016D+00	0.233145D-01	0.997709D+00	0.243891D-01
-1.9	0.996911D+00	0.291463D-01	0.996447D+00	0.304435D-01
-1.8	0.995228D+00	0.363128D-01	0.994543D+00	0.378498D-01
-1.7	0.992705D+00	0.450272D-01	0.991717D+00	0.468036D-01
-1.6	0.988999D+00	0.554790D-01	0.987615D+00	0.574668D-01
-1.5	0.983679D+00	0.677996D-01	0.981804D+00	0.699337D-01
-1.4	0.976244D+00	0.820229D-01	0.973797D+00	0.841955D-01
-1.3	0.966153D+00	0.980480D-01	0.963084D+00	0.100110D+00
-1.2	0.952875D+00	0.115614D+00	0.949184D+00	0.117385D+00
-1.1	0.935950D+00	0.134294D+00	0.931699D+00	0.135582D+00
-1.0	0.915048D+00	0.153519D+00	0.910366D+00	0.154142D+00
-0.9	0.890021D+00	0.172619D+00	0.885096D+00	0.172430D+00
-0.8	0.860927D+00	0.190884D+00	0.855991D+00	0.189792D+00
-0.7	0.828036D+00	0.207631D+00	0.823342D+00	0.205610D+00
-0.6	0.791802D+00	0.222264D+00	0.787599D+00	0.219355D+00
-0.5	0.752827D+00	0.234317D+00	0.749337D+00	0.230622D+00
-0.4	0.711800D+00	0.243481D+00	0.709202D+00	0.239150D+00
-0.3	0.669452D+00	0.249611D+00	0.667870D+00	0.244821D+00
-0.2	0.626498D+00	0.252712D+00	0.626002D+00	0.247654D+00
-0.1	0.583605D+00	0.252920D+00	0.584211D+00	0.247783D+00
0.0	0.541362D+00	0.250473D+00	0.543037D+00	0.245427D+00
0.1	0.500263D+00	0.245678D+00	0.502937D+00	0.240870D+00
0.2	0.460701D+00	0.238881D+00	0.464278D+00	0.234430D+00
0.3	0.422975D+00	0.230446D+00	0.427339D+00	0.226439D+00
0.4	0.387291D+00	0.220730D+00	0.392317D+00	0.217225D+00
0.5	0.353775D+00	0.210070D+00	0.359337D+00	0.207098D+00
0.6	0.322489D+00	0.198773D+00	0.328464D+00	0.196343D+00
0.7	0.293438D+00	0.187108D+00	0.299710D+00	0.185210D+00
0.8	0.266583D+00	0.175308D+00	0.273049D+00	0.173917D+00
0.9	0.241857D+00	0.163566D+00	0.248423D+00	0.162647D+00
1.0	0.219167D+00	0.152038D+00	0.225751D+00	0.151549D+00
1.1	0.198404D+00	0.140847D+00	0.204939D+00	0.140743D+00
1.2	0.179451D+00	0.130086D+00	0.185880D+00	0.130320D+00
1.3	0.162187D+00	0.119822D+00	0.168464D+00	0.120346D+00
1.4	0.146490D+00	0.110101D+00	0.152578D+00	0.110869D+00
1.5	0.132239D+00	0.100947D+00	0.138111D+00	0.101918D+00
1.6	0.119318D+00	0.923745D-01	0.124952D+00	0.935081D-01
1.7	0.107615D+00	0.843818D-01	0.112998D+00	0.856423D-01
1.8	0.970263D-01	0.769596D-01	0.102150D+00	0.783151D-01
1.9	0.874529D-01	0.700913D-01	0.923123D-01	0.715137D-01
2.0	0.788036D-01	0.637553D-01	0.833986D-01	0.652201D-01
2.1	0.709938D-01	0.579263D-01	0.753271D-01	0.594124D-01
2.2	0.639457D-01	0.525766D-01	0.680220D-01	0.540662D-01
2.3	0.575876D-01	0.476773D-01	0.614138D-01	0.491555D-01
2.4	0.518541D-01	0.431990D-01	0.554385D-01	0.446537D-01
2.5	0.466856D-01	0.391126D-01	0.500374D-01	0.405337D-01
2.6	0.420277D-01	0.353892D-01	0.451568D-01	0.367691D-01
2.7	0.378309D-01	0.320013D-01	0.407477D-01	0.333338D-01
2.8	0.340503D-01	0.289222D-01	0.367655D-01	0.302029D-01
2.9	0.306453D-01	0.261268D-01	0.331697D-01	0.273526D-01
3.0	0.275791D-01	0.235915D-01	0.299233D-01	0.247603D-01

log X	$\beta=0.44$		$\beta=0.43$	
	$X_M=0.711231 (-0.147989D+00)$		$X_M=0.707070 (-0.150538D+00)$	
	ε' 0.604336	ε'' 0.242905	ε' 0.605496	ε'' 0.237744
-3.0	0.999972D+00	0.260852D-02	0.999967D+00	0.275494D-02
-2.9	0.999955D+00	0.328351D-02	0.999947D+00	0.346768D-02
-2.8	0.999929D+00	0.413284D-02	0.999916D+00	0.436438D-02
-2.7	0.999888D+00	0.520124D-02	0.999867D+00	0.549211D-02
-2.6	0.999823D+00	0.654461D-02	0.999790D+00	0.690955D-02
-2.5	0.999720D+00	0.823251D-02	0.999668D+00	0.868954D-02
-2.4	0.999558D+00	0.103510D-01	0.999477D+00	0.109217D-01
-2.3	0.999304D+00	0.130054D-01	0.999177D+00	0.137150D-01
-2.2	0.998906D+00	0.163228D-01	0.998710D+00	0.171993D-01
-2.1	0.998288D+00	0.204536D-01	0.997989D+00	0.215262D-01
-2.0	0.997338D+00	0.255692D-01	0.996889D+00	0.268650D-01
-1.9	0.995894D+00	0.318571D-01	0.995232D+00	0.333951D-01
-1.8	0.993735D+00	0.395081D-01	0.992783D+00	0.412921D-01
-1.7	0.990570D+00	0.486967D-01	0.989239D+00	0.507059D-01
-1.6	0.986033D+00	0.595542D-01	0.984231D+00	0.617345D-01
-1.5	0.979698D+00	0.721364D-01	0.977341D+00	0.743953D-01
-1.4	0.971096D+00	0.863933D-01	0.968127D+00	0.885995D-01
-1.3	0.959754D+00	0.102146D+00	0.956158D+00	0.104137D+00
-1.2	0.945245D+00	0.119077D+00	0.941058D+00	0.120673D+00
-1.1	0.927231D+00	0.136745D+00	0.922552D+00	0.137768D+00
-1.0	0.905513D+00	0.154607D+00	0.900497D+00	0.154903D+00
-0.9	0.880053D+00	0.172067D+00	0.874902D+00	0.171524D+00
-0.8	0.850991D+00	0.188527D+00	0.845935D+00	0.187086D+00
-0.7	0.818631D+00	0.203432D+00	0.813907D+00	0.201097D+00
-0.6	0.783414D+00	0.216315D+00	0.779249D+00	0.213148D+00
-0.5	0.745886D+00	0.226828D+00	0.742477D+00	0.222937D+00
-0.4	0.706652D+00	0.234749D+00	0.704153D+00	0.230281D+00
-0.3	0.666337D+00	0.239987D+00	0.664853D+00	0.235111D+00
-0.2	0.625549D+00	0.242571D+00	0.625136D+00	0.237462D+00
-0.1	0.584848D+00	0.242629D+00	0.585515D+00	0.237458D+00
0.0	0.544733D+00	0.240366D+00	0.546449D+00	0.235289D+00
0.1	0.505625D+00	0.236042D+00	0.508324D+00	0.231193D+00
0.2	0.467864D+00	0.229949D+00	0.471458D+00	0.225436D+00
0.3	0.431712D+00	0.222389D+00	0.436095D+00	0.218295D+00
0.4	0.397358D+00	0.213663D+00	0.402415D+00	0.210044D+00
0.5	0.364925D+00	0.204057D+00	0.370538D+00	0.200944D+00
0.6	0.334479D+00	0.193831D+00	0.340534D+00	0.191238D+00
0.7	0.306040D+00	0.183221D+00	0.312428D+00	0.181142D+00
0.8	0.279591D+00	0.172430D+00	0.286210D+00	0.170846D+00
0.9	0.255085D+00	0.161630D+00	0.261844D+00	0.160511D+00
1.0	0.232453D+00	0.150963D+00	0.239271D+00	0.150275D+00
1.1	0.211610D+00	0.140544D+00	0.218419D+00	0.140246D+00
1.2	0.192464D+00	0.130463D+00	0.199203D+00	0.130512D+00
1.3	0.174912D+00	0.120786D+00	0.181532D+00	0.121139D+00
1.4	0.158851D+00	0.111563D+00	0.165312D+00	0.112177D+00
1.5	0.144179D+00	0.102823D+00	0.150448D+00	0.103658D+00
1.6	0.130793D+00	0.945859D-01	0.136847D+00	0.956029D-01
1.7	0.118596D+00	0.868573D-01	0.124415D+00	0.880217D-01
1.8	0.107494D+00	0.796354D-01	0.113065D+00	0.809152D-01
1.9	0.973962D-01	0.729107D-01	0.102713D+00	0.742774D-01
2.0	0.882203D-01	0.666689D-01	0.932774D-01	0.680971D-01
2.1	0.798873D-01	0.608914D-01	0.846844D-01	0.623590D-01
2.2	0.723244D-01	0.555570D-01	0.768633D-01	0.570448D-01
2.3	0.654639D-01	0.506425D-01	0.697488D-01	0.521343D-01
2.4	0.592433D-01	0.461237D-01	0.632802D-01	0.476057D-01
2.5	0.536052D-01	0.419762D-01	0.574013D-01	0.434370D-01
2.6	0.484968D-01	0.381754D-01	0.520603D-01	0.396056D-01
2.7	0.438696D-01	0.346972D-01	0.472097D-01	0.360894D-01
2.8	0.396796D-01	0.315182D-01	0.428057D-01	0.328665D-01
2.9	0.358862D-01	0.286160D-01	0.388082D-01	0.299159D-01
3.0	0.324526D-01	0.259692D-01	0.351806D-01	0.272175D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.42$ $X_M=0.702945 (-0.153079D+00)$		$\beta=0.41$ $X_M=0.698857 (-0.155612D+00)$	
	ϵ' 0.606634	ϵ'' 0.232566	ϵ' 0.607749	ϵ'' 0.227369
-3.0	0.999960D+00	0.292015D-02	0.999951D+00	0.310748D-02
-2.9	0.999936D+00	0.367543D-02	0.999923D+00	0.391092D-02
-2.8	0.999899D+00	0.462546D-02	0.999878D+00	0.492124D-02
-2.7	0.999841D+00	0.581988D-02	0.999807D+00	0.619090D-02
-2.6	0.999748D+00	0.732041D-02	0.999695D+00	0.778487D-02
-2.5	0.999603D+00	0.920330D-02	0.999520D+00	0.978305D-02
-2.4	0.999375D+00	0.115617D-01	0.999246D+00	0.122819D-01
-2.3	0.999019D+00	0.145082D-01	0.998821D+00	0.153969D-01
-2.2	0.998468D+00	0.181747D-01	0.998166D+00	0.192614D-01
-2.1	0.997623D+00	0.227125D-01	0.997172D+00	0.240242D-01
-2.0	0.996344D+00	0.282864D-01	0.995684D+00	0.298429D-01
-1.9	0.994441D+00	0.350649D-01	0.993496D+00	0.368718D-01
-1.8	0.991663D+00	0.432045D-01	0.990348D+00	0.452453D-01
-1.7	0.987700D+00	0.528277D-01	0.985926D+00	0.550559D-01
-1.6	0.982184D+00	0.639981D-01	0.979869D+00	0.663323D-01
-1.5	0.974714D+00	0.766953D-01	0.971797D+00	0.790186D-01
-1.4	0.964877D+00	0.907955D-01	0.961332D+00	0.929608D-01
-1.3	0.952286D+00	0.106063D+00	0.948136D+00	0.107904D+00
-1.2	0.936622D+00	0.122154D+00	0.931940D+00	0.123502D+00
-1.1	0.917666D+00	0.138636D+00	0.912579D+00	0.139337D+00
-1.0	0.895325D+00	0.155020D+00	0.890007D+00	0.154951D+00
-0.9	0.869650D+00	0.170795D+00	0.864306D+00	0.169877D+00
-0.8	0.840829D+00	0.185470D+00	0.835682D+00	0.183677D+00
-0.7	0.809177D+00	0.198608D+00	0.804446D+00	0.195967D+00
-0.6	0.775109D+00	0.209855D+00	0.770997D+00	0.206439D+00
-0.5	0.739110D+00	0.218952D+00	0.735788D+00	0.214876D+00
-0.4	0.701703D+00	0.225749D+00	0.699302D+00	0.221154D+00
-0.3	0.663416D+00	0.230194D+00	0.662027D+00	0.225238D+00
-0.2	0.624762D+00	0.232329D+00	0.624428D+00	0.227172D+00
-0.1	0.586212D+00	0.232271D+00	0.586937D+00	0.227068D+00
0.0	0.548184D+00	0.230197D+00	0.549938D+00	0.225089D+00
0.1	0.511035D+00	0.226324D+00	0.513758D+00	0.221432D+00
0.2	0.475060D+00	0.220893D+00	0.478670D+00	0.216318D+00
0.3	0.440487D+00	0.214157D+00	0.444888D+00	0.209975D+00
0.4	0.407487D+00	0.206367D+00	0.412575D+00	0.202632D+00
0.5	0.376178D+00	0.197761D+00	0.381843D+00	0.194506D+00
0.6	0.346630D+00	0.188562D+00	0.352765D+00	0.185802D+00
0.7	0.318873D+00	0.178970D+00	0.325375D+00	0.176704D+00
0.8	0.292906D+00	0.169162D+00	0.299678D+00	0.167377D+00
0.9	0.268700D+00	0.159290D+00	0.275653D+00	0.157963D+00
1.0	0.246208D+00	0.149483D+00	0.253262D+00	0.148584D+00
1.1	0.225365D+00	0.139845D+00	0.232450D+00	0.139339D+00
1.2	0.206099D+00	0.130462D+00	0.213153D+00	0.130310D+00
1.3	0.188326D+00	0.121399D+00	0.195298D+00	0.121563D+00
1.4	0.171963D+00	0.112706D+00	0.178809D+00	0.113145D+00
1.5	0.156923D+00	0.104416D+00	0.163606D+00	0.105094D+00
1.6	0.143117D+00	0.965536D-01	0.149609D+00	0.974324D-01
1.7	0.130461D+00	0.891298D-01	0.136740D+00	0.901760D-01
1.8	0.118872D+00	0.821490D-01	0.124920D+00	0.833310D-01
1.9	0.108270D+00	0.756082D-01	0.114076D+00	0.768975D-01
2.0	0.985791D-01	0.694993D-01	0.104135D+00	0.708701D-01
2.1	0.897282D-01	0.638101D-01	0.950290D-01	0.652395D-01
2.2	0.816496D-01	0.585251D-01	0.866944D-01	0.599929D-01
2.3	0.742803D-01	0.536268D-01	0.790702D-01	0.551154D-01
2.4	0.675615D-01	0.490960D-01	0.720998D-01	0.505903D-01
2.5	0.614385D-01	0.449129D-01	0.657301D-01	0.464000D-01
2.6	0.558608D-01	0.410570D-01	0.599120D-01	0.425262D-01
2.7	0.507816D-01	0.375081D-01	0.545997D-01	0.389503D-01
2.8	0.461579D-01	0.342459D-01	0.497509D-01	0.356539D-01
2.9	0.419501D-01	0.312508D-01	0.453267D-01	0.326188D-01
3.0	0.381216D-01	0.285041D-01	0.412908D-01	0.298274D-01

log X	$\beta=0.40$ $X_M=0.694804 (-0.158138D+00)$		$\beta=0.39$ $X_M=0.690786 (-0.160657D+00)$	
	ϵ' 0.608842	ϵ'' 0.222154	ϵ' 0.609912	ϵ'' 0.216921
-3.0	0.999940D+00	0.332103D-02	0.999925D+00	0.356581D-02
-2.9	0.999905D+00	0.417923D-02	0.999882D+00	0.448657D-02
-2.8	0.999850D+00	0.525798D-02	0.999814D+00	0.564330D-02
-2.7	0.999763D+00	0.661280D-02	0.999706D+00	0.709493D-02
-2.6	0.999627D+00	0.831203D-02	0.999538D+00	0.891295D-02
-2.5	0.999414D+00	0.104392D-01	0.999276D+00	0.111846D-01
-2.4	0.999082D+00	0.130942D-01	0.998871D+00	0.140123D-01
-2.3	0.998570D+00	0.163942D-01	0.998253D+00	0.175141D-01
-2.2	0.997790D+00	0.204723D-01	0.997319D+00	0.218206D-01
-2.1	0.996617D+00	0.254727D-01	0.995932D+00	0.270688D-01
-2.0	0.994882D+00	0.315428D-01	0.993912D+00	0.333923D-01
-1.9	0.992369D+00	0.388193D-01	0.991031D+00	0.409073D-01
-1.8	0.988810D+00	0.474113D-01	0.987017D+00	0.496957D-01
-1.7	0.983889D+00	0.573804D-01	0.981564D+00	0.597874D-01
-1.6	0.977263D+00	0.687209D-01	0.974343D+00	0.711447D-01
-1.5	0.968575D+00	0.813448D-01	0.965031D+00	0.836516D-01
-1.4	0.957485D+00	0.950734D-01	0.953328D+00	0.971106D-01
-1.3	0.943703D+00	0.109640D+00	0.938990D+00	0.111249D+00
-1.2	0.927014D+00	0.124700D+00	0.921849D+00	0.125732D+00
-1.1	0.907298D+00	0.139858D+00	0.901832D+00	0.140186D+00
-1.0	0.884550D+00	0.154687D+00	0.878964D+00	0.154223D+00
-0.9	0.858879D+00	0.168768D+00	0.853376D+00	0.167463D+00
-0.8	0.830499D+00	0.181709D+00	0.825288D+00	0.179564D+00
-0.7	0.799718D+00	0.193175D+00	0.794999D+00	0.190236D+00
-0.6	0.766914D+00	0.202904D+00	0.762855D+00	0.199252D+00
-0.5	0.732510D+00	0.210712D+00	0.729278D+00	0.206462D+00
-0.4	0.696951D+00	0.216499D+00	0.694649D+00	0.211786D+00
-0.3	0.660683D+00	0.220243D+00	0.659384D+00	0.215212D+00
-0.2	0.624132D+00	0.221991D+00	0.623872D+00	0.216788D+00
-0.1	0.587690D+00	0.221849D+00	0.588470D+00	0.216613D+00
0.0	0.551710D+00	0.219964D+00	0.553500D+00	0.214823D+00
0.1	0.516492D+00	0.216518D+00	0.519237D+00	0.211582D+00
0.2	0.482288D+00	0.211710D+00	0.485915D+00	0.207070D+00
0.3	0.449299D+00	0.205748D+00	0.453719D+00	0.201475D+00
0.4	0.417678D+00	0.198837D+00	0.422796D+00	0.194984D+00
0.5	0.387534D+00	0.191178D+00	0.393251D+00	0.187778D+00
0.6	0.358940D+00	0.182957D+00	0.365155D+00	0.180027D+00
0.7	0.331934D+00	0.174343D+00	0.338550D+00	0.171887D+00
0.8	0.306526D+00	0.165490D+00	0.313450D+00	0.163498D+00
0.9	0.282703D+00	0.156529D+00	0.289850D+00	0.154984D+00
1.0	0.260434D+00	0.147575D+00	0.267725D+00	0.146453D+00
1.1	0.239675D+00	0.138723D+00	0.247039D+00	0.137994D+00
1.2	0.220368D+00	0.130052D+00	0.227743D+00	0.129682D+00
1.3	0.202450D+00	0.121624D+00	0.209782D+00	0.121580D+00
1.4	0.185852D+00	0.113490D+00	0.193095D+00	0.113734D+00
1.5	0.170503D+00	0.105684D+00	0.177617D+00	0.106182D+00
1.6	0.156329D+00	0.982334D-01	0.163281D+00	0.989505D-01
1.7	0.143258D+00	0.911541D-01	0.150022D+00	0.920579D-01
1.8	0.131218D+00	0.844552D-01	0.137773D+00	0.855151D-01
1.9	0.120139D+00	0.781392D-01	0.126468D+00	0.793269D-01
2.0	0.109954D+00	0.722035D-01	0.116045D+00	0.734932D-01
2.1	0.100597D+00	0.666413D-01	0.106444D+00	0.680096D-01
2.2	0.920091D-01	0.614426D-01	0.976053D-01	0.628685D-01
2.3	0.841309D-01	0.565949D-01	0.894749D-01	0.580599D-01
2.4	0.769082D-01	0.520839D-01	0.820004D-01	0.535717D-01
2.5	0.702900D-01	0.478942D-01	0.751325D-01	0.493906D-01
2.6	0.642284D-01	0.440094D-01	0.688252D-01	0.455023D-01
2.7	0.586790D-01	0.404129D-01	0.630352D-01	0.418919D-01
2.8	0.536003D-01	0.370878D-01	0.577222D-01	0.385443D-01
2.9	0.489539D-01	0.340176D-01	0.528486D-01	0.354443D-01
3.0	0.447044D-01	0.311858D-01	0.483796D-01	0.325769D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.38$		$\beta=0.37$	
	$X_M=0.686803 (-0.163168D+00)$		$X_M=0.682854 (-0.165672D+00)$	
	ϵ'	ϵ''	ϵ'	ϵ''
	0.610959	0.211670	0.611985	0.206401
-3.0	0.999906D+00	0.384807D-02	0.999879D+00	0.417554D-02
-2.9	0.999851D+00	0.484061D-02	0.999810D+00	0.525095D-02
-2.8	0.999765D+00	0.608659D-02	0.999701D+00	0.659887D-02
-2.7	0.999631D+00	0.764793D-02	0.999530D+00	0.828543D-02
-2.6	0.999421D+00	0.960029D-02	0.999267D+00	0.103891D-01
-2.5	0.999097D+00	0.120334D-01	0.998862D+00	0.130017D-01
-2.4	0.998600D+00	0.150514D-01	0.998249D+00	0.162277D-01
-2.3	0.997849D+00	0.187715D-01	0.997334D+00	0.201812D-01
-2.2	0.996729D+00	0.233193D-01	0.995990D+00	0.249800D-01
-2.1	0.995090D+00	0.288215D-01	0.994056D+00	0.307373D-01
-2.0	0.992740D+00	0.353949D-01	0.991332D+00	0.375502D-01
-1.9	0.989446D+00	0.431324D-01	0.987581D+00	0.454865D-01
-1.8	0.984938D+00	0.520875D-01	0.982542D+00	0.545712D-01
-1.7	0.978921D+00	0.622594D-01	0.975935D+00	0.647749D-01
-1.6	0.971090D+00	0.735814D-01	0.967484D+00	0.760058D-01
-1.5	0.961153D+00	0.859145D-01	0.956932D+00	0.881077D-01
-1.4	0.948855D+00	0.990486D-01	0.944065D+00	0.100864D+00
-1.3	0.933996D+00	0.112711D+00	0.928726D+00	0.114007D+00
-1.2	0.916453D+00	0.126582D+00	0.910833D+00	0.127235D+00
-1.1	0.896189D+00	0.140313D+00	0.890380D+00	0.140229D+00
-1.0	0.873259D+00	0.153552D+00	0.867445D+00	0.152672D+00
-0.9	0.847808D+00	0.165964D+00	0.842181D+00	0.164268D+00
-0.8	0.820056D+00	0.177247D+00	0.814808D+00	0.174757D+00
-0.7	0.790292D+00	0.187151D+00	0.785601D+00	0.183925D+00
-0.6	0.758850D+00	0.195488D+00	0.754871D+00	0.191613D+00
-0.5	0.726093D+00	0.202130D+00	0.722954D+00	0.197719D+00
-0.4	0.692396D+00	0.207017D+00	0.690191D+00	0.202194D+00
-0.3	0.658130D+00	0.210145D+00	0.656919D+00	0.205043D+00
-0.2	0.623648D+00	0.211562D+00	0.623460D+00	0.206314D+00
-0.1	0.589277D+00	0.211360D+00	0.590108D+00	0.206091D+00
0.0	0.555307D+00	0.209664D+00	0.557131D+00	0.204489D+00
0.1	0.521993D+00	0.206622D+00	0.524759D+00	0.201639D+00
0.2	0.489549D+00	0.202397D+00	0.493191D+00	0.197690D+00
0.3	0.458149D+00	0.197156D+00	0.462587D+00	0.192791D+00
0.4	0.427929D+00	0.191071D+00	0.433078D+00	0.187097D+00
0.5	0.398992D+00	0.184304D+00	0.404759D+00	0.180755D+00
0.6	0.371409D+00	0.177010D+00	0.377702D+00	0.173906D+00
0.7	0.345222D+00	0.169332D+00	0.351949D+00	0.166680D+00
0.8	0.320450D+00	0.161400D+00	0.327525D+00	0.159195D+00
0.9	0.297093D+00	0.153328D+00	0.304433D+00	0.151557D+00
1.0	0.275135D+00	0.145216D+00	0.282662D+00	0.143860D+00
1.1	0.254544D+00	0.137149D+00	0.262190D+00	0.136183D+00
1.2	0.235281D+00	0.129198D+00	0.242983D+00	0.128595D+00
1.3	0.217298D+00	0.121424D+00	0.224999D+00	0.121152D+00
1.4	0.200540D+00	0.113873D+00	0.208191D+00	0.113900D+00
1.5	0.184951D+00	0.106581D+00	0.192510D+00	0.106876D+00
1.6	0.170470D+00	0.995775D-01	0.177901D+00	0.100108D+00
1.7	0.157037D+00	0.928808D-01	0.164309D+00	0.936161D-01
1.8	0.144591D+00	0.865040D-01	0.151680D+00	0.874148D-01
1.9	0.133071D+00	0.804538D-01	0.139957D+00	0.815128D-01
2.0	0.122419D+00	0.747324D-01	0.129086D+00	0.759139D-01
2.1	0.112579D+00	0.693375D-01	0.119014D+00	0.706182D-01
2.2	0.103495D+00	0.642641D-01	0.109690D+00	0.656225D-01
2.3	0.951154D-01	0.595041D-01	0.101066D+00	0.609211D-01
2.4	0.873902D-01	0.550479D-01	0.930922D-01	0.565061D-01
2.5	0.802726D-01	0.508840D-01	0.857257D-01	0.523683D-01
2.6	0.737181D-01	0.470001D-01	0.789234D-01	0.484972D-01
2.7	0.676848D-01	0.433830D-01	0.726451D-01	0.448812D-01
2.8	0.621339D-01	0.400194D-01	0.668532D-01	0.415087D-01
2.9	0.570285D-01	0.368955D-01	0.615120D-01	0.383673D-01
3.0	0.523345D-01	0.339977D-01	0.565883D-01	0.354448D-01

log X	$\beta=0.36$ $X_M=0.678940 (-0.168169D+00)$		$\beta=0.35$ $X_M=0.675058 (-0.170659D+00)$	
	ϵ' 0.612987	ϵ'' 0.201114	ϵ' 0.613967	ϵ'' 0.195808
-3.0	0.999843D+00	0.455785D-02	0.999792D+00	0.500714D-02
-2.9	0.999753D+00	0.572867D-02	0.999674D+00	0.628857D-02
-2.8	0.999612D+00	0.719407D-02	0.999491D+00	0.788847D-02
-2.7	0.999394D+00	0.902291D-02	0.999210D+00	0.987845D-02
-2.6	0.999060D+00	0.112963D-01	0.998784D+00	0.123411D-01
-2.5	0.998553D+00	0.141072D-01	0.998146D+00	0.153685D-01
-2.4	0.997795D+00	0.175581D-01	0.997207D+00	0.190590D-01
-2.3	0.996680D+00	0.217575D-01	0.995849D+00	0.235124D-01
-2.2	0.995070D+00	0.268122D-01	0.993927D+00	0.288218D-01
-2.1	0.992794D+00	0.328191D-01	0.991262D+00	0.350650D-01
-2.0	0.989648D+00	0.398532D-01	0.987650D+00	0.422938D-01
-1.9	0.985400D+00	0.479567D-01	0.982865D+00	0.505248D-01
-1.8	0.979797D+00	0.571270D-01	0.976674D+00	0.597302D-01
-1.7	0.972583D+00	0.673090D-01	0.968842D+00	0.698335D-01
-1.6	0.963510D+00	0.783909D-01	0.959156D+00	0.807075D-01
-1.5	0.952360D+00	0.902046D-01	0.947433D+00	0.921779D-01
-1.4	0.938958D+00	0.102532D+00	0.933536D+00	0.104031D+00
-1.3	0.923187D+00	0.115117D+00	0.917384D+00	0.116024D+00
-1.2	0.904998D+00	0.127678D+00	0.898959D+00	0.127899D+00
-1.1	0.884415D+00	0.139925D+00	0.878303D+00	0.139396D+00
-1.0	0.861530D+00	0.151578D+00	0.855525D+00	0.150268D+00
-0.9	0.836504D+00	0.162376D+00	0.830784D+00	0.160290D+00
-0.8	0.809551D+00	0.172097D+00	0.804288D+00	0.169271D+00
-0.7	0.780930D+00	0.180560D+00	0.776281D+00	0.177060D+00
-0.6	0.750931D+00	0.187632D+00	0.747031D+00	0.183548D+00
-0.5	0.719862D+00	0.193230D+00	0.716816D+00	0.188667D+00
-0.4	0.688033D+00	0.197319D+00	0.685922D+00	0.192395D+00
-0.3	0.655751D+00	0.199909D+00	0.654623D+00	0.194742D+00
-0.2	0.623305D+00	0.201045D+00	0.623183D+00	0.195755D+00
-0.1	0.590964D+00	0.200806D+00	0.591844D+00	0.195504D+00
0.0	0.558971D+00	0.199295D+00	0.560826D+00	0.194084D+00
0.1	0.527536D+00	0.196632D+00	0.530322D+00	0.191601D+00
0.2	0.496840D+00	0.192948D+00	0.500498D+00	0.188173D+00
0.3	0.467035D+00	0.188380D+00	0.471493D+00	0.183921D+00
0.4	0.438241D+00	0.183063D+00	0.443420D+00	0.178968D+00
0.5	0.410551D+00	0.177132D+00	0.416368D+00	0.173435D+00
0.6	0.384033D+00	0.170714D+00	0.390402D+00	0.167434D+00
0.7	0.358732D+00	0.163928D+00	0.365570D+00	0.161075D+00
0.8	0.334674D+00	0.156880D+00	0.341898D+00	0.154455D+00
0.9	0.311868D+00	0.149670D+00	0.319399D+00	0.147664D+00
1.0	0.290308D+00	0.142383D+00	0.298073D+00	0.140782D+00
1.1	0.269977D+00	0.135094D+00	0.277906D+00	0.133879D+00
1.2	0.250848D+00	0.127868D+00	0.258878D+00	0.127014D+00
1.3	0.232886D+00	0.120759D+00	0.240960D+00	0.120240D+00
1.4	0.216050D+00	0.113811D+00	0.224119D+00	0.113600D+00
1.5	0.200297D+00	0.107060D+00	0.208315D+00	0.107128D+00
1.6	0.185578D+00	0.100535D+00	0.193506D+00	0.100852D+00
1.7	0.171845D+00	0.942567D-01	0.179649D+00	0.947953D-01
1.8	0.159047D+00	0.882404D-01	0.166699D+00	0.889729D-01
1.9	0.147133D+00	0.824963D-01	0.154609D+00	0.833966D-01
2.0	0.136054D+00	0.770302D-01	0.143333D+00	0.780734D-01
2.1	0.125760D+00	0.718440D-01	0.132828D+00	0.730069D-01
2.2	0.116204D+00	0.669363D-01	0.123048D+00	0.681977D-01
2.3	0.107339D+00	0.623035D-01	0.113949D+00	0.636436D-01
2.4	0.991210D-01	0.579396D-01	0.105492D+00	0.593408D-01
2.5	0.915076D-01	0.538372D-01	0.976348D-01	0.552834D-01
2.6	0.844580D-01	0.499875D-01	0.903396D-01	0.514643D-01
2.7	0.779339D-01	0.463809D-01	0.835699D-01	0.478756D-01
2.8	0.718990D-01	0.430070D-01	0.772907D-01	0.445084D-01
2.9	0.663187D-01	0.398551D-01	0.714692D-01	0.413535D-01
3.0	0.611610D-01	0.369142D-01	0.660741D-01	0.384011D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.34$		$\beta=0.33$	
	$X_M=0.671210 (-0.173141D+00)$		$X_M=0.667395 (-0.175617D+00)$	
	ϵ' 0.614925	ϵ'' 0.190485	ϵ' 0.615859	ϵ'' 0.185144
-3.0	0.999720D+00	0.553818D-02	0.999617D+00	0.616926D-02
-2.9	0.999563D+00	0.694762D-02	0.999406D+00	0.772630D-02
-2.8	0.999322D+00	0.870126D-02	0.999088D+00	0.965441D-02
-2.7	0.998958D+00	0.108725D-01	0.998612D+00	0.120274D-01
-2.6	0.998412D+00	0.135438D-01	0.997913D+00	0.149254D-01
-2.5	0.997609D+00	0.168043D-01	0.996904D+00	0.184319D-01
-2.4	0.996448D+00	0.207453D-01	0.995474D+00	0.226285D-01
-2.3	0.994802D+00	0.254549D-01	0.993490D+00	0.275890D-01
-2.2	0.992518D+00	0.310100D-01	0.990793D+00	0.333718D-01
-2.1	0.989415D+00	0.374674D-01	0.987207D+00	0.400125D-01
-2.0	0.985294D+00	0.448558D-01	0.982540D+00	0.475170D-01
-1.9	0.979942D+00	0.531674D-01	0.976597D+00	0.558560D-01
-1.8	0.973144D+00	0.623526D-01	0.969184D+00	0.649617D-01
-1.7	0.964695D+00	0.723175D-01	0.960127D+00	0.747283D-01
-1.6	0.954413D+00	0.829254D-01	0.949275D+00	0.850139D-01
-1.5	0.942150D+00	0.940008D-01	0.936514D+00	0.956467D-01
-1.4	0.927806D+00	0.105338D+00	0.921773D+00	0.106433D+00
-1.3	0.911329D+00	0.116712D+00	0.905030D+00	0.117166D+00
-1.2	0.892726D+00	0.127888D+00	0.886310D+00	0.127637D+00
-1.1	0.872058D+00	0.138637D+00	0.865688D+00	0.137643D+00
-1.0	0.849439D+00	0.148742D+00	0.843281D+00	0.146999D+00
-0.9	0.825029D+00	0.158011D+00	0.819246D+00	0.155540D+00
-0.8	0.799027D+00	0.166282D+00	0.793770D+00	0.163132D+00
-0.7	0.771659D+00	0.173429D+00	0.767064D+00	0.169670D+00
-0.6	0.743170D+00	0.179363D+00	0.739352D+00	0.175083D+00
-0.5	0.713818D+00	0.184033D+00	0.710865D+00	0.179330D+00
-0.4	0.683856D+00	0.187421D+00	0.681836D+00	0.182402D+00
-0.3	0.653536D+00	0.189544D+00	0.652488D+00	0.184316D+00
-0.2	0.623093D+00	0.190444D+00	0.623034D+00	0.185112D+00
-0.1	0.592747D+00	0.190186D+00	0.593673D+00	0.184851D+00
0.0	0.562697D+00	0.188855D+00	0.564582D+00	0.183606D+00
0.1	0.533118D+00	0.186545D+00	0.535923D+00	0.181464D+00
0.2	0.504162D+00	0.183362D+00	0.507834D+00	0.178517D+00
0.3	0.475959D+00	0.179415D+00	0.480434D+00	0.174861D+00
0.4	0.448613D+00	0.174812D+00	0.453821D+00	0.170594D+00
0.5	0.422208D+00	0.169661D+00	0.428074D+00	0.165812D+00
0.6	0.396810D+00	0.164065D+00	0.403254D+00	0.160606D+00
0.7	0.372462D+00	0.158121D+00	0.379408D+00	0.155064D+00
0.8	0.349196D+00	0.151918D+00	0.356566D+00	0.149267D+00
0.9	0.327025D+00	0.145538D+00	0.334746D+00	0.143290D+00
1.0	0.305955D+00	0.139055D+00	0.313954D+00	0.137198D+00
1.1	0.285976D+00	0.132533D+00	0.294187D+00	0.131053D+00
1.2	0.267074D+00	0.126029D+00	0.275435D+00	0.124907D+00
1.3	0.249224D+00	0.119591D+00	0.257679D+00	0.118806D+00
1.4	0.232400D+00	0.113261D+00	0.240895D+00	0.112788D+00
1.5	0.216567D+00	0.107072D+00	0.225057D+00	0.106886D+00
1.6	0.201689D+00	0.101053D+00	0.210131D+00	0.101129D+00
1.7	0.187728D+00	0.952245D-01	0.196086D+00	0.955366D-01
1.8	0.174642D+00	0.896046D-01	0.182885D+00	0.901273D-01
1.9	0.162392D+00	0.842053D-01	0.170491D+00	0.849140D-01
2.0	0.150934D+00	0.790350D-01	0.158866D+00	0.799061D-01
2.1	0.140229D+00	0.740985D-01	0.147974D+00	0.751098D-01
2.2	0.130234D+00	0.693980D-01	0.137777D+00	0.705284D-01
2.3	0.120911D+00	0.649332D-01	0.128238D+00	0.661631D-01
2.4	0.112220D+00	0.607015D-01	0.119322D+00	0.620130D-01
2.5	0.104124D+00	0.566990D-01	0.110992D+00	0.580755D-01
2.6	0.965862D-01	0.529201D-01	0.103216D+00	0.543466D-01
2.7	0.895722D-01	0.493584D-01	0.959608D-01	0.508212D-01
2.8	0.830489D-01	0.460064D-01	0.891946D-01	0.474935D-01
2.9	0.769847D-01	0.428563D-01	0.828877D-01	0.443568D-01
3.0	0.713497D-01	0.398998D-01	0.770114D-01	0.414040D-01

log X	$\beta=0.32$ $X_M=0.663612 (-0.178085D+00)$		$\beta=0.31$ $X_M=0.659862 (-0.180547D+00)$	
	ϵ' 0.616771	ϵ'' 0.179784	ϵ' 0.617661	ϵ'' 0.174407
-3.0	0.999468D+00	0.692229D-02	0.999251D+00	0.782287D-02
-2.9	0.999184D+00	0.864828D-02	0.998866D+00	0.973992D-02
-2.8	0.998761D+00	0.107722D-01	0.998305D+00	0.120799D-01
-2.7	0.998141D+00	0.133661D-01	0.997499D+00	0.149110D-01
-2.6	0.997248D+00	0.165056D-01	0.996365D+00	0.183014D-01
-2.5	0.995985D+00	0.202657D-01	0.994797D+00	0.223150D-01
-2.4	0.994236D+00	0.247155D-01	0.992674D+00	0.270063D-01
-2.3	0.991860D+00	0.299125D-01	0.989856D+00	0.324152D-01
-2.2	0.988703D+00	0.358955D-01	0.986192D+00	0.385613D-01
-2.1	0.984591D+00	0.426793D-01	0.981521D+00	0.454398D-01
-2.0	0.979349D+00	0.502491D-01	0.975682D+00	0.530180D-01
-1.9	0.972798D+00	0.585573D-01	0.968520D+00	0.612343D-01
-1.8	0.964773D+00	0.675227D-01	0.959895D+00	0.699981D-01
-1.7	0.955126D+00	0.770317D-01	0.949688D+00	0.791931D-01
-1.6	0.943739D+00	0.869424D-01	0.937809D+00	0.886811D-01
-1.5	0.930528D+00	0.970903D-01	0.924200D+00	0.983080D-01
-1.4	0.915448D+00	0.107296D+00	0.908842D+00	0.107910D+00
-1.3	0.898500D+00	0.117373D+00	0.891751D+00	0.117323D+00
-1.2	0.879725D+00	0.127137D+00	0.872981D+00	0.126384D+00
-1.1	0.859205D+00	0.136412D+00	0.852619D+00	0.134944D+00
-1.0	0.837060D+00	0.145040D+00	0.830784D+00	0.142867D+00
-0.9	0.813440D+00	0.152882D+00	0.807619D+00	0.150039D+00
-0.8	0.788522D+00	0.159826D+00	0.783287D+00	0.156369D+00
-0.7	0.762499D+00	0.165788D+00	0.757966D+00	0.161786D+00
-0.6	0.735575D+00	0.170709D+00	0.731840D+00	0.166246D+00
-0.5	0.707959D+00	0.174561D+00	0.705098D+00	0.169728D+00
-0.4	0.679860D+00	0.177338D+00	0.677926D+00	0.172231D+00
-0.3	0.651478D+00	0.179059D+00	0.650505D+00	0.173773D+00
-0.2	0.623005D+00	0.179761D+00	0.623005D+00	0.174390D+00
-0.1	0.594620D+00	0.179499D+00	0.595587D+00	0.174131D+00
0.0	0.566482D+00	0.178339D+00	0.568395D+00	0.173053D+00
0.1	0.538738D+00	0.176358D+00	0.541561D+00	0.171226D+00
0.2	0.511514D+00	0.173636D+00	0.515200D+00	0.168719D+00
0.3	0.484918D+00	0.170260D+00	0.489411D+00	0.165610D+00
0.4	0.459043D+00	0.166315D+00	0.464280D+00	0.161973D+00
0.5	0.433963D+00	0.161887D+00	0.439875D+00	0.157885D+00
0.6	0.409736D+00	0.157057D+00	0.416254D+00	0.153418D+00
0.7	0.386408D+00	0.151905D+00	0.393460D+00	0.148642D+00
0.8	0.364009D+00	0.146502D+00	0.371524D+00	0.143622D+00
0.9	0.342560D+00	0.140917D+00	0.350467D+00	0.138419D+00
1.0	0.322070D+00	0.135210D+00	0.330302D+00	0.133088D+00
1.1	0.302540D+00	0.129437D+00	0.311033D+00	0.127680D+00
1.2	0.283962D+00	0.123646D+00	0.292655D+00	0.122241D+00
1.3	0.266324D+00	0.117880D+00	0.275161D+00	0.116808D+00
1.4	0.249606D+00	0.112176D+00	0.258534D+00	0.111418D+00
1.5	0.233786D+00	0.106565D+00	0.242757D+00	0.106100D+00
1.6	0.218837D+00	0.101074D+00	0.227808D+00	0.100880D+00
1.7	0.204729D+00	0.957237D-01	0.213661D+00	0.957778D-01
1.8	0.191432D+00	0.905326D-01	0.200290D+00	0.908118D-01
1.9	0.178913D+00	0.855139D-01	0.187666D+00	0.859956D-01
2.0	0.167139D+00	0.806777D-01	0.175761D+00	0.813400D-01
2.1	0.156075D+00	0.760313D-01	0.164542D+00	0.768531D-01
2.2	0.145689D+00	0.715792D-01	0.153981D+00	0.725404D-01
2.3	0.135945D+00	0.673239D-01	0.144047D+00	0.684053D-01
2.4	0.126813D+00	0.632658D-01	0.134709D+00	0.644496D-01
2.5	0.118258D+00	0.594036D-01	0.125938D+00	0.606731D-01
2.6	0.110249D+00	0.557347D-01	0.117704D+00	0.570746D-01
2.7	0.102756D+00	0.522555D-01	0.109980D+00	0.536516D-01
2.8	0.957498D-01	0.489614D-01	0.102737D+00	0.504008D-01
2.9	0.892013D-01	0.458469D-01	0.959496D-01	0.473179D-01
3.0	0.830835D-01	0.429063D-01	0.895914D-01	0.443984D-01

Complex Permittivities for the Williams-Watts Relaxation

log X	$\beta=0.30$		$\beta=0.29$	
	$X_M=0.656142 (-0.183002D+00)$		$X_M=0.652455 (0.185450D+00)$	
	ϵ' 0.618527	ϵ'' 0.169012	ϵ' 0.619370	ϵ'' 0.163598
-3.0	0.998936D+00	0.889968D-02	0.998481D+00	0.101831D-01
-2.9	0.998416D+00	0.110290D-01	0.997783D+00	0.125428D-01
-2.8	0.997675D+00	0.136024D-01	0.996812D+00	0.153612D-01
-2.7	0.996635D+00	0.166814D-01	0.995484D+00	0.186910D-01
-2.6	0.995206D+00	0.203244D-01	0.993703D+00	0.225783D-01
-2.5	0.993278D+00	0.245819D-01	0.991358D+00	0.270594D-01
-2.4	0.990727D+00	0.294926D-01	0.988329D+00	0.321565D-01
-2.3	0.987419D+00	0.350786D-01	0.984488D+00	0.378750D-01
-2.2	0.983209D+00	0.413414D-01	0.979703D+00	0.442002D-01
-2.1	0.977953D+00	0.482591D-01	0.973846D+00	0.510964D-01
-2.0	0.971507D+00	0.557848D-01	0.966794D+00	0.585064D-01
-1.9	0.963740D+00	0.638467D-01	0.958440D+00	0.663523D-01
-1.8	0.954538D+00	0.723496D-01	0.948695D+00	0.745383D-01
-1.7	0.943808D+00	0.811782D-01	0.937489D+00	0.829536D-01
-1.6	0.931487D+00	0.902014D-01	0.924782D+00	0.914766D-01
-1.5	0.917540D+00	0.992777D-01	0.910559D+00	0.999798D-01
-1.4	0.901966D+00	0.108261D+00	0.894834D+00	0.108334D+00
-1.3	0.884796D+00	0.117006D+00	0.877647D+00	0.116415D+00
-1.2	0.866090D+00	0.125373D+00	0.859066D+00	0.124103D+00
-1.1	0.845941D+00	0.133236D+00	0.839180D+00	0.131292D+00
-1.0	0.824461D+00	0.140482D+00	0.818099D+00	0.137889D+00
-0.9	0.801787D+00	0.147016D+00	0.795949D+00	0.143816D+00
-0.8	0.778068D+00	0.152763D+00	0.772867D+00	0.149014D+00
-0.7	0.753466D+00	0.157668D+00	0.749000D+00	0.153438D+00
-0.6	0.728147D+00	0.161696D+00	0.724497D+00	0.157064D+00
-0.5	0.702281D+00	0.164834D+00	0.699508D+00	0.159881D+00
-0.4	0.676034D+00	0.167082D+00	0.674183D+00	0.161894D+00
-0.3	0.649567D+00	0.168460D+00	0.648664D+00	0.163120D+00
-0.2	0.623033D+00	0.169000D+00	0.623088D+00	0.163591D+00
-0.1	0.596575D+00	0.168745D+00	0.597581D+00	0.163343D+00
0.0	0.570322D+00	0.167748D+00	0.572261D+00	0.162423D+00
0.1	0.544393D+00	0.166067D+00	0.547234D+00	0.160883D+00
0.2	0.518893D+00	0.163767D+00	0.522594D+00	0.158778D+00
0.3	0.493913D+00	0.160912D+00	0.498424D+00	0.156166D+00
0.4	0.469531D+00	0.157570D+00	0.474796D+00	0.153104D+00
0.5	0.445811D+00	0.153807D+00	0.451770D+00	0.149652D+00
0.6	0.422808D+00	0.149688D+00	0.429398D+00	0.145866D+00
0.7	0.400564D+00	0.145274D+00	0.407719D+00	0.141801D+00
0.8	0.379109D+00	0.140624D+00	0.386764D+00	0.137509D+00
0.9	0.358467D+00	0.135792D+00	0.366557D+00	0.133038D+00
1.0	0.338650D+00	0.130830D+00	0.347112D+00	0.128433D+00
1.1	0.319666D+00	0.125781D+00	0.328439D+00	0.123735D+00
1.2	0.301515D+00	0.120688D+00	0.310539D+00	0.118983D+00
1.3	0.284190D+00	0.115587D+00	0.293411D+00	0.114211D+00
1.4	0.267681D+00	0.110511D+00	0.277047D+00	0.109446D+00
1.5	0.251973D+00	0.105487D+00	0.261435D+00	0.104718D+00
1.6	0.237049D+00	0.100540D+00	0.246563D+00	0.100047D+00
1.7	0.222887D+00	0.956909D-01	0.232412D+00	0.954545D-01
1.8	0.209466D+00	0.909561D-01	0.218964D+00	0.909564D-01
1.9	0.196759D+00	0.863498D-01	0.206197D+00	0.865667D-01
2.0	0.184741D+00	0.818832D-01	0.194090D+00	0.822968D-01
2.1	0.173387D+00	0.775648D-01	0.182619D+00	0.781557D-01
2.2	0.162668D+00	0.734012D-01	0.171760D+00	0.741504D-01
2.3	0.152557D+00	0.693965D-01	0.161489D+00	0.702860D-01
2.4	0.143027D+00	0.655535D-01	0.151782D+00	0.665659D-01
2.5	0.134050D+00	0.618732D-01	0.142614D+00	0.629923D-01
2.6	0.125601D+00	0.583555D-01	0.133960D+00	0.595658D-01
2.7	0.117653D+00	0.549990D-01	0.125797D+00	0.562863D-01
2.8	0.110180D+00	0.518016D-01	0.118102D+00	0.531525D-01
2.9	0.103158D+00	0.487601D-01	0.110851D+00	0.501624D-01
3.0	0.965617D-01	0.458709D-01	0.104022D+00	0.473133D-01