Preface to the IUTAM Symposium 50 Years of Chaos

50 years ago, Yoshisuke Ueda demonstrated chaos in a periodically-forced oscillator using an analog computer. Together with Stephen Smale's construction of the horseshoe around the same time, this can be seen as the explicit discovery of chaos.

These discoveries were enabled by developments and discoveries in dynamical systems theory, starting with Henri Poincaré's pioneering theoretical work on celestial mechanics in the eighteen-ninetees and Balthasar van der Pol's experimental work in radio engineering published in 1927.

Since the discoveries by Ueda and Smale, chaos has been increasingly flourishing and many new theoretical and experimental extensions and discoveries have been made.

Nowadays, applications vary from mathematics, programming, microbiology, biology, computer science, economics, engineering, finance, philosophy, physics, politics, population dynamics, psychology, robotics, to meteorology.

In view of the above, it is highly appropriate to devote an IUTAM Symposium to this flourishing field and to let this Symposium take place at the university where chaos has been discovered experimentally.

It is particularly noticeable that Professor Ueda will participate in this Symposium and present a lecture.

The Symposium organizers have composed a challenging Symposium program, where the latest developments will be presented and future trends will be stipulated.

I am sure that the discussions at this IUTAM Symposium will give rise to new co-operations and new developments.

I wish you a fruitful IUTAM Symposium.

Dick H. van Campen
IUTAM Representative
Member-at-Large of IUTAM