

数理解析研究所講究録 1756

頂点作用素代数・有限群・組合せ論の研究

京都大学数理解析研究所

2011年8月

*RIMS Kôkyûroku 1756*

*Research into Vertex Operator Algebras,  
Finite Groups and Combinatorics*

*December 13 ~17, 2010*

*edited by Masahiko Miyamoto*

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*Research Institute for Mathematical Sciences*

*Kyoto University, Kyoto, Japan*

This is a report of research done at the Research Institute for Mathematical Sciences, Kyoto University. The papers contained herein are in final form and will not be submitted for publication elsewhere.

## 研究集会プログラム

"Research into Vertex Operator Algebras, Finite Groups and Combinatorics"

From 13th to 17th December

Room 127 3rd Building of Faculty of Science, Kyoto University

### Program

#### 13th December

- 9:50-10:00      Opening
- 10:00-11:00     Ito, Tatsuro (Kanazawa University)  
Tridiagonal pairs and Drinfel'd polynomials
- 11:15-12:15     Yoshiara, Satoshi (Tokyo Woman's Christian University)  
Around equivalences on APN functions
- 13:30-14:30     Suda, Sho (Tohoku University)  
Complex spherical designs and codes
- 14:45-15:45     Nozaki, Hiroshi (Tohoku University)  
Uniqueness of maximal two-distance sets on a sphere
- 16:00-17:00     Munemasa Akihiro (Tohoku University)  
Towards the classification of 4-frames in the Leech lattice

#### 14th December

- 9:45-10:45      Takegahara, Yugen (Muroran Institute of Technology)  
Generalizations of Burnside ring and their applications
- 11:00-12:00     Chigira, Naoki (Kumamoto University)  
On groups generated by two elements
- 13:30-14:30     Iiyori, Nobuo (Yamaguchi University)  
Centralizers of  $p$ -elements of a finite group
- 14:45-15:45     Nebe, Gabriele (RWTH Aachen University)  
An extremal even unimodular lattice of dimension 72
- 16:00-17:00     Ivanov, Alexander (Imperial College London)  
Towards the Majorana representation of  $A_{12}'$

#### 15th December

- 9:45-10:45      Griess, Robert L., Jr. (University of Michigan)  
Moonshine path from the extended  $E_8$  diagram to the Monster

- 11:00-12:00 Li, Haisheng (Rutgers University)  
Vertex  $F$ -algebras and their  $\phi$ -coordinated modules
- 13:30-14:30 Lam, Ching Hung (Academia Sinica)  
Framed VOAs associated to an exceptional triply even code.
- 14:45-15:45 Shimakura, Hiroki (Aichi University of Education)  
Toward the classification of holomorphic framed vertex operator algebras of central charge 24
- 16:00-17:00 Gannon, Terry (University of Alberta)  
Exotic VOAs of Haagerup-Izumi type
- 16th December
- 9:45-10:45 Dong, Chongying (University of California Santa Cruz)  
Quantum dimensions and quantum Galois theory
- 11:00-12:00 Tuite, Michael (National University of Ireland, Galway)  
The bosonic vertex operator algebra on a genus  $g$  Riemann surface
- 13:30-14:30 Arakawa, Tomoyuki (Kyoto University)  
Kac-Wakimoto conjecture and associated varieties of modules over Kac-Moody algebras
- 14:45-15:45 Abe, Toshiyuki (Ehime University)  
 $C_2$ -cofiniteness of  $\mathbb{Z}_2$ -permutation orbifold models
- 16:00-17:00 Miyamoto, Masahiko (University of Tsukuba)  
Orbifold theory of vertex operator algebras.
- 17th December
- 9:45-10:45 Mason, Geoffrey (University of California Santa Cruz)  
Vertex operator algebras and Jacobi forms.
- 11:00-12:00 Yamuskulna, Gaywalee (Illinois State University)  
Recent developments in the theory of shifted vertex operator algebras
- 13:30-14:30 Wang, Qing (Xiamen University)  
Parafermion Vertex Operator Algebras
- 14:45-15:45 Jiang, Cuipo (Shanghai Jiaotong University)  
Representations of affine Nappi-Witten algebras and the associated vertex algebra.

