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Hakata Workshop 2016[1]

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10:43–10:45 Opening   Tetsuji Taniguchi

10:45–11:30 Masashi Shinohara(Shiga University)
  Multiply union families in $\mathbb{N}^n$

13:00–14:30 Poster Session
  Poster Session (Software in Mathematics Demonstration Track in Hakata Workshop 2016)

15:10–15:55 Shuya Chiba(Kumamoto University)
  On 2-factors with k cycles in graphs

16:05–16:50 Ryuichi Harasawa(Nagasaki University)
  A simple improvement for integer factorizations with implicit hints

16:50–16:55 Closing   Yoshihiro Mizoguchi

18:00 − Post-meeting party

Poster Session

Theme: Software in Mathematics Demonstration Track
Speakers and Titles:

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2.　　　 (　　　　　　　)　　　　　 Wang

3.　　　 (　　　　　　　)　　　　　　　　　　　　　 Mathematica

4.　　　 (　　　　　　) Graph　　　　　　　　 3D

5. Daisuke Sakurai (RIKEN), Osamu Saeki (Kyushu University), Hamish Carr (University of Leeds), Hsiang-Yun Wu (Keio University), Takahiro Yamamoto (Kyushu Sangyo University), David Duke (University of Leeds), Kenji Ono (RIKEN), and Shigeo Takahashi (University of Aizu) Visualizing Singular Fibers - UI & Impacts-

6.　　　　 ,　　　 (　　　　　　　) kissing number

7.　　　 (　　　　　　) RocSampler :

Abstract

Masashi Shinohara(Shiga University)

Title: Multiply union families in $\mathbb{N}^n$

Abstract: Let $A \subset \mathbb{N}^n$ be an r-wise s-union family, that is, a family of sequences with n components of non-negative integers such that for any r sequences in A the total sum of the maximum of each component in those sequences is at most s. In this talk, we determine the maximum size of A and its unique extremal configuration provided (i) n is sufficiently large for fixed r and s, or (ii) $n = r + 1$. This is a joint work with Peter Frankl and Norihide Tokushige.

Shuya Chiba(Kumamoto University)

Title: On 2-factors with k cycles in graphs Abstract: A 2-factor of a graph is a spanning collection vertex-disjoint cycles. In [Degree conditions for 2-factors, J. Graph Theory 24 (2) (1997), 165–173], Brandt, Chen, Faudree, Gould, Lesniak considered the degree condition for the existence of 2-factors with exactly k cycles in general graphs, which is a generalization of Ore's classical theorem on Hamilton cycles. In this talk, we will give some results on the degree conditions for the existence of 2-factors with exactly k cycles including every edge of a specified perfect matching in bipartite graphs, and we will discuss about a relationship between our result and the result of Brandt et al.

Ryuichi Harasawa(Nagasaki University)

Title: A simple improvement for integer factorizations with implicit hints Abstract: The integer factorization is a fundamental theme of computer algebra and also an important topic of public key cryptography, especially for cryptosystems whose security relies on the infeasibility of integer factorization (e,g., the RSA cryptosystem). So far, many researchers proposed various methods for factoring integers. May et al. proposed a method for integer factorization with implicit hints. They reduced this problem to finding a shortest (or a relatively short) vector in the lattice obtained by implicit hints. In this talk, I give an improvement of May et al.'s method, and verify the efficiency of the improvement by computer experiments for various parameters.