



2015年度
第2回 九州大学 組合せ数学セミナー
Hakata Workshop 2016¹

下記のようにセミナーを開催しますので、ご案内申し上げます。

世話人: 溝口 佳寛 (九大 IMI) 脇 隼人 (九大 IMI)
 渋田 敬史 (九大 IMI) 谷口 哲至 (広島工大)
 島袋 修 (長崎大) 田上 真 (九州工大)
 栗原大武 (北九州高専) 千葉周也 (熊本大)
アドバイザー: 坂内 英一 (上海交通大学/九大数理)

記

日時: 2016年2月23日(火) 10:43–16:55

場所: Academic Research and Industrial Collaboration Management office of Kyushu University < Momochi > **URL:** <http://comb.math.kyushu-u.ac.jp/>

プログラム

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

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Poster Session

Theme: Software in Mathematics Demonstration Track

Speakers and Titles:

1. 山口大介 (株式会社エス・イー・エー創研) 3次元モデリング・解析システム『siren』
2. 松嶋聡昭 (九州大学大学院数理学府) 証明付レンガ型 Wang タイリングプログラムの実装
3. 松尾拓哉 (九州大学大学院数理学府) 計算折り紙の定式化と折り操作の Mathematica 言語による実装
4. 高坂太智 (九州大学大学院数理学府) Graph の距離に関する色分けと 3D グラフィックス表示
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. 鈴木信之介, 上山泰史 (九州大学理学部数学科) kissing number の上界を与える最適化問題について
7. 桑原雄貴 (九州大学大学院数理学府) RocSampler : クラスタ間重複を制御するタンパク質複合体の予測アルゴリズム

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.