

# Computational Commutative Algebra and Convex Polytopes

～計算可換代数と凸多面体～

[http://cr.math.sci.osaka-u.ac.jp/~a-tsuchiya/RIMS\\_CCACP.html](http://cr.math.sci.osaka-u.ac.jp/~a-tsuchiya/RIMS_CCACP.html)

August, 1 (Mon) --- August, 5 (Fri) 2016

Maskawa Hall, Kyoto University, Kyoto, Japan

(#13 North Comprehensive Education and Research Building in the campus map)

<http://www.kyoto-u.ac.jp/en/access/yoshida/north.html>

## PROGRAM

### August, 1 (Mon)

13:15—14:15 Akiyoshi Tsuchiya (Osaka University)

Gorenstein Fano polytopes arising from two poset polytopes

14:30—15:30 Robert Davis (Michigan State University)

Pattern-Avoiding Polytopes

15:45---16:45 Liam Solus (MIT and IST Austria)

On  $h^*$ -unimodality and the integer decomposition property for reflexive simplices

### August, 2 (Tue)

9:30—10:30 Uwe Nagel (University of Kentucky)

Equivariant Hilbert Series

10:45—11:45 David Cook II (Eastern Illinois University)

Some toric varieties satisfying many Laplace equations

13:15—14:15 Andreas Paffenholz (Technische Universität Darmstadt)

Structure and Classifications of Lattice Polytopes

14:30—15:30 Thomas Prince (Imperial College London)

Complete intersection constructions for certain toric degenerations of Fano varieties

15:45---16:45 Fu Liu (University of California, Davis)

Ehrhart positivity and  $BV$ - $\alpha$ -positivity for generalized permutahedra

## August, 3 (Wed)

- 9:30—10:30 Emanuela De Negri (Genova University)  
Universal Gröbner bases and Cartwright-Sturmfels ideals
- 10:45—11:45 Sijong Kwak (KAIST)  
Characterization of ACM varieties with d-linear resolution

## August, 4 (Thu)

- 9:30—10:30 Fabrizio Zanella (Michigan Technological University)  
Some recent interactions between commutative algebra and combinatorics
- 10:45—11:45 Huy Tai Ha (Tulane University)  
Powers of sums of ideals
- 13:15—14:15 Akihiro Higashitani (Kyoto Sangyo University)  
On counterexamples of Cayley conjecture for lattice simplices
- 14:30—15:30 Johannes Hofscheier (Otto-von-Guericke-University Magdeburg)  
Lattice simplices with a given degree
- 15:45---16:45 Benjamin Nill (Otto-von-Guericke-University Magdeburg)  
Ehrhart theory for spanning lattice polytopes

## August, 5 (Fri)

- 9:30—10:30 Vokmar Welker (Philipps-Universität Marburg)  
On the ideal of orthogonal representations of a graph
- 10:45—11:45 Lukas Katthän (Goethe-Universität Frankfurt)  
Multiplicative structures on minimal free resolutions of monomial ideals

**Takayuki Hibi**

**Department of Pure and Applied Mathematics**

**Graduate School of Information Science and Technology**

**Osaka University**

**Suita, Osaka 565-0871, Japan**

**Fax : (+81)6-6105-5888**

**Tel : (+81)6-6105-5895**

**Email : hibi@math.sci.osaka-u.ac.jp**