

The 8th Mathematical Society of Japan Seasonal Institute
 Current Trends on Gröbner Bases
 --- The 50th Anniversary of Gröbner Bases ---
 Hotel Nikko Osaka, Osaka, Japan
 July 1 -- July 10, 2015

School
 July 1 -- July 4, 2015

Mathias Drton
 (University of Washington)
 Algebraic Problems in Structural Equation Modeling

Toshinori Oaku
 (Tokyo Woman's Christian University)
 Algorithms for D-modules, Integration, and Generalized Functions

Michael Stillman
 (Cornell University)
 Computing in Algebraic Geometry: Sheaf Cohomology and Its
 Applications in Geometry and Physics

Seth Sullivant
 (North Carolina State University)
 Identifiability Problems in Statistics and Biology

	Wed 1 July	Thu 2 July	Fri 3 July	Sat 4 July
10:00--11:00	Stillman	Drton	Sullivant	Oaku
11:30--12:30	Sullivant	Oaku	Stillman	Drton
14:30--15:30	Oaku	Sullivant	Sullivant(*)	Oaku(*)
16:00--17:00	Drton	Stillman	Stillman(*)	Drton(*)

(*) Exercise

Conference
July 6 -- July 10, 2015

	Mon 6 July	Tue 7 July	Wed 8 July	Thu 9 July	Fri 10 July
09:00 10:00	Bernd Sturmfels	Mathias Drton	Bruno Buchberger	Anna M. Bigatti	Caroline Uhler
10:15 11:15	Michael Stillman	Seth Sullivant	Jürgen Herzog	Anton Leykin	Sonja Petrovic
11:30 12:30	Hyungju Park	Ezra Miller		Dongming Wang	Raimundas Vidunas
14:30 15:30	Thomas Kahle			Viktor Levandovskyy	Eva Riccomagno
15:45 16:45	Laura Matusevich			Mateusz Michalek	Constantin Siriteanu
17:00 18:00	Toshinori Oaku			Anders N. Jensen	Henry Wynn
18:30 20:30	Welcome Party			Banquet	

Monday 6 July

- 09:00--10:00 Bernd Sturmfels (University of California at Berkeley)
Decomposing tensors into frames
- 10:15--11:15 Michael Stillman (Cornell University)
Applications of computational algebraic geometry to vacuum
moduli spaces of supersymmetric models in physics
- 11:30--12:30 Hyungju Park (Pohang University of Science and Technology)
Invariant theory and wavelets
- 14:30--15:30 Thomas Kahle (OvGU Magdeburg)
Detecting binomiality
- 15:45--16:45 **Laura Matusevich (Texas A&M University) ^(#)**
A-hypergeometric functions
- 17:00--18:00 Toshinori Oaku (Tokyo Woman's Christian University)
Some D-module theoretic aspects of the local
cohomology of a polynomial ring

(#) canceled

Tuesday 7 July

- 09:00--10:00 Mathias Drton (University of Washington)
Identifiability of Gaussian graphical models with one latent source
- 10:15--11:15 Seth Sullivant (North Carolina State University)
Algebraic geometry of Gaussian graphical models
- 11:30--12:30 Ezra Miller (Duke University)
Multigraded moduli from fruit flies via stratified space statistics

14:00--18:00 19:00--22:00 Contributed Talks

- (14:00) Ruriko Yoshida: Applications of holonomic gradient method to normalizing kernels in the Billera-Holmes-Vogtmann treespace
- (14:20) Donald Richards: The multiple roots phenomenon in maximum likelihood estimation in factor analysis
- (14:40) Satoshi Aoki: Markov chain Monte Carlo methods for the Box-Behnken designs and centrally symmetric configurations
- (15:00) Kentaro Tanaka: Linear algebraic methods and Gröbner bases for experimental design and group lasso
- (15:20) Y. Jane Liu: Application of non-commutative Gröbner bases to Kirchhoff circular plates with functionally graded materials
- (15:40) Nobuki Takayama: Gröbner bases and holonomic gradient method
- (16:00) Alexandru Constantinescu: Hilbert schemes, Gröbner cells, and extension algebras
- (16:20) Michela Ceria: A unifying form for noetherian polynomial reductions
- (16:40) Hidefumi Ohsugi: Reverse lexicographic Gröbner bases and Gorenstein Fano polytopes
- (17:00) Akihiro Higashitani: Very ample polytopes and Gröbner basis
- (17:20) Elizabeth Gross: Toric ideals from neural codes
- (17:40) Akihiro Shikama: Many toric ideals generated by quadratic binomials possess no quadratic Gröbner bases
- (19:00) Isaac Burke: Exploiting symmetry in characterizing bases of toric ideals
- (19:20) Ayesha A. Qureshi: Polyomino Ideals
- (19:40) Kyouko Kimura: A minimal free resolution of the cover ideal of a very well-covered graph
- (20:00) Enrico Sbarra: The lex-plus-power conjecture holds for extremal betti numbers
- (20:20) Akiyoshi Tsuchiya: Best possible lower bounds on the coefficients of Ehrhart polynomials
- (20:40) Anjan Gupta: Transfer of the Golod property along ring homomorphisms
- (21:00) Kazuki Shibata: Strong Koszulness of the toric ring associated to a cut ideal
- (21:20) Kazunori Matsuda: F-thresholds and F-pure thresholds of rings defined by binomial ideals
- (21:40) Heather A. Harrington: Gröbner bases for systems biology: Model comparison and experimental design

Wednesday 8 July

- 09:00--10:00 Bruno Buchberger (RISC, Johannes Kepler University)
A new algorithm for Gröbner bases and a new application
- 10:15--11:15 Jürgen Herzog (Universität Duisburg--Essen)
Monomial ideals and toric rings associated with isotone maps
between posets

Thursday 9 July

- 09:00--10:00 Anna M. Bigatti (Universita' degli Studi di Genova)
CoCoA and CoCoALib: Gröbner bases for everyone
- 10:15--11:15 Anton Leykin (Georgia Institute of Technology)
Noetherianity up to symmetry and equivariant Gröbner bases
- 11:30--12:30 Dongming Wang (Beihang University and CNRS)
On connections between triangular sets and Gröbner bases
- 14:30--15:30 Viktor Levandovskyy (RWTH Aachen University)
Noncommutative algebras and Gröbner bases
- 15:45--16:45 Mateusz Michałek (Polish Academy of Sciences)
Quadratic Gröbner basis for (non)toric varieties
- 17:00--18:00 Anders N. Jensen (Aarhus University)
Advances in application of Gröbner bases to tropical varieties

Friday 10 July

- 09:00--10:00 Caroline Uhler (Institute of Science and Technology Austria)
Exponential varieties
- 10:15--11:15 Sonja Petrovic (Illinois Institute of Technology)
Bouquet algebra of toric ideals
- 11:30--12:30 Raimundas Vidunas (The University of Tokyo)
Differential relations for the PDF of the largest root of the
Wishart distribution
- 14:30--15:30 Eva Riccomagno (Universita' degli Studi di Genova)
A classification method based on the LDP algorithm for implicit
regression and some other of its applications
- 15:45--16:45 Constantin Siriteanu (Osaka University)
Applications of computer algebra and holonomic gradient
method in wireless communications performance analysis
and evaluation
- 17:00--18:00 Henry Wynn (London School of Economics)
Monomial ideal methods in tree percolation