

# Theoretical Effectivity and Practical Effectivity of Gröbner Bases

Rikkyo University  
Ikebukuro Campus, Building 8, Room 8201  
August 22 -- 26, 2005



## Organizing Committee

Takayuki Hibi (Osaka University)  
Toshinori Oaku (Tokyo Woman's Christian University)  
Hidefumi Ohsugi (Rikkyo University, Chair)  
Akimichi Takemura (University of Tokyo)  
Kazuhiro Yokoyama (Rikkyo University)

<http://www.rkmath.rikkyo.ac.jp/~ohsugi/conference/groebnerconf.html>

## Monday 22 August

- 9:00--10:00 Volker Weispfenning (Universität Passau)  
Ordinary differential Gröbner bases
- 10:15--11:15 Shmuel Onn (Technion -- Israel Institute of Technology)  
A few of my favorite universality theorems
- 11:30--12:15 Yosuke Sato (Tokyo University of Science)  
Boolean Gröbner bases are always comprehensive
- 14:00--14:45 Nobuki Takayama (Kobe University)  
Algorithms for local  $\mathbb{D}$ -modules
- 15:00--15:45 Masayuki Noro (Kobe University)  
Modular computation of Gröbner bases and its  
application to Dynamic Evaluation
- 16:15--17:00 Hiroyuki Sawada (National Institute of Advanced  
Industrial Science and Technology)  
Automatic selection of term orderings for  
efficient computation of Gröbner bases
- 17:15--18:00 Mitsushi Fujimoto (Fukuoka University of Education)  
Masakazu Suzuki (Kyushu University)  
Kazuhiro Yokoyama (Rikkyo University)  
On polynomial curves in the affine plane

## Tuesday 23 August

- 9:00--10:00 Rekha Thomas (University of Washington)  
Computing Gröbner Fans and Tropical Varieties
- 10:15--11:15 Jésus A. De Loera (University of California, Davis)  
New algorithms & complexity results on the  
computation of Gröbner bases of toric ideals
- 11:30--12:15 Diane Maclagan (Rutgers University)  
Gröbner techniques in the McKay correspondence
- 14:00--14:45 Yasuko Matsui (Tokai University)  
On the Gröbner walks
- 15:00--15:45 Akimichi Takemura (University of Tokyo)  
Satoshi Aoki (University of Tokyo)  
Markov bases for sampling contingency tables with  
fixed marginals

16:00--16:45 Shojiro Sakata (University of Electro-Communications)  
Recent development of coding theory related to  
Gröbner basis

18:00-- Banquet

### Wednesday 24 August

9:00--10:00 Uli Walther (Purdue University)  
A connectedness result in positive characteristic

10:15--11:15 Mathias Schulze (Purdue University)  
Computing the global Brieskorn lattice of tame  
polynomial functions

11:30--12:15 Yayoi Nakamura (Kinki University)  
Invariants of semiquasihomogeneous isolated  
singularities

14:00--15:00 Anton Leykin (University of Illinois at Chicago)  
Localization of holonomic  $\mathcal{D}$ -modules: several  
points of view

15:15--16:00 Shinichi Tajima (Niigata University)  
An algorithm for computing Noetherian  
differential operators

16:30--18:30 Contributed Talks, Session A, Room 8201

Hiroshi Hirai (Kyoto University)  
Greedy Fans: A geometric approach to dual greedy  
algorithms

Hiromasa Nakayama (Kobe University)  
Algorithms of computing local  $\mathfrak{b}$  function  
by using Gröbner basis and division in  
 $\widehat{\mathcal{D}}[s]$

Katsuyoshi Ohara (Kanazawa University)  
Nobuki Takayama (Kobe University)  
Dimension formula of solution spaces of  
 $\mathcal{A}$ -hypergeometric differential-difference  
systems

16:30--18:30 Contributed Talks, Session B, Room 8202

Takashi Wada (Rikkyo University)  
Gröbner bases of Hilbert ideals

Satoshi Murai (Osaka University)  
Algebraic shifting of finite graphs

Hirotschi Abo (Colorado State University)  
An application of the Quillen--Suslin theorem to  
the construction of vector bundles

### Thursday 25 August

9:00--10:00 Gerhard Pfister (Universität Kaiserslautern)  
Algorithmic resolution of singularities

10:15--11:15 Raymond Hemmecke (Otto-von-Guericke  
Universität Magdeburg)  
Effective computation of Gröbner bases and Markov  
bases of toric ideals

11:30--12:15 Mutsumi Saito (Hokkaido University)  
Listing the  $\$A\$$ -equivalence classes

14:00--15:00 William N. Traves (U. S. Naval Academy)  
Differential operators and invariant theory

15:15--16:00 Feyja Hreinsdóttir (University of Iceland)  
Term orders for the ideal of commuting matrices

16:15--17:00 Toshio Sakata (Kyushu University)  
Ryuichi Sawae (Okayama Science University)  
Creation operators of three way contingency  
tables

### Friday 26 August

9:00--10:00 Jürgen Herzog (Universität Duisburg--Essen)  
Powers of ideals and Gröbner bases

10:15--11:15 Henry P. Wynn (London School of Economics)  
Gröbner bases in algebraic statistics