



# **RIMS Symposia (open)**

## **Computer Algebra – Foundations and its Applications**

Coordinator

Takuya Kitamoto (Faculty of Education, Yamaguchi Univ.)

Tatsuyoshi Hamada (College of Bioresource Sciences, Nihon Univ.)

Date : December 19 – December 21, 2022

Method : Hybrid meetings (face to face and online)

- If you would like to participate, please register at the following URL by noon on Wednesday, December 14.

<https://forms.gle/NVNzghhpz7H6nQRr9>

- If you would like to attend after that time, please contact [kitamoto@yamaguchi-u.ac.jp](mailto:kitamoto@yamaguchi-u.ac.jp) with your name, organization, and e-mail address.

Contact information

Coordinator Takuya Kitamoto (Yamaguchi Univ.) [kitamoto@yamaguchi-u.ac.jp](mailto:kitamoto@yamaguchi-u.ac.jp)

12月19日(Mon)

13:00 – 13:10	Opening		
13:10 – 13:40	T. Nakano (Tokyo Denki Univ.), M. Shindo * (Tokyo Denki Univ.), T. Yoshimura * (Tokyo Denki Univ.)	On the correlation of mathematical indicators of the difficulty level of Sudoku puzzles in terms of Boolean Groebner base	Online
13:40 – 14:10	M. Kaneko * ( Toho Univ. ), T. Kitamoto * (Yamaguchi Univ. ), T. Noda ( Toho Univ. )	Analysis of operation logs of HTML-based teaching materials for independence test	Online
14:10 – 14:40	T. Kitamoto * (Yamaguchi Univ. ), S. Takato (KetCindy Center), N. Hamaguchi (National Institute of Technology, Nagano College)	An assignment transfer system using simple mathematical rules and role of Maxima in the system	Face-to-face
Break time			
14:50 – 15:20	N. Osumi * (Kanto Gakuen Univ.), Y. Kondoh (National Institute of Technology, Kagawa College), M. Fujimura (National Defense Academy)	Computation of interval arithmetic with the use of interval arithmetic	Face-to-face
15:20 – 15:50	M. Fujimura * (National Defense Academy)	An extension of Chapple's formula by Blaschke-like maps	Face-to-face
15:50 – 16:20	T. Sasaki * (Univ. of Tsukuba, Honorary professor)	On the TES (Term Elimination Sequence)	Face-to-face
16:20 – 16:50	T. Takahashi * (Konan Univ. )	Application of computer algebra system in game theory	Online

12月20日(Tue)

9:30 – 10:00	M. Noro * (Rikkyo Univ.)	Implementation of $F_4$ -like reduction in signature based algorithm	Online
10:00 – 10:30	K. Yokoyama * (Rikkyo Univ.)	Parametric Factorization of Multivariate Polynomials	Online
10:30 – 11:00	K. Sakata * (The Univ. of Tokyo), T. Kato (The Univ. of Tokyo), M. Kudo (The Univ. of Tokyo), K. Yokoyama (Rikkyo Univ.)	On computing Groebner bases over exterior algebra	Online

Break time			
11:10 – 11:40	H. Nakayama * (Tokai Univ. ), Y. Yamamoto ( Tokai Univ.)	Compute Vertices of Polyhedrons Using Groebner Bases	Face-to-face
11:40 – 12:10	K. Nabeshima * (Tokyo Univ. of Science), S. Tajima (Niigata Univ., Honorary professor )	Noetherian operators of positive dimensional ideals and hypersurface singularities	Face-to-face
12:10 – 12:40	S. Tajima * (Niigata Univ., Honorary professor ), K. Nabeshima (Tokyo Univ. of Science)	Algorithm for computing the bifurcation set of a polynomial function I	Face-to-face
Lunch time			
14:10 – 15:10	T. Oshima * (Josai Univ. )	Invited lecture "Triangulation of a convex polygon and computer algebra"	Face-to-face
Break time			
15:20 – 15:50	Y. Ishihara * (Tokyo Univ. of Science )	On Computations of Ideal Operations with Parameter	Face-to-face
15:50 – 16:20	R. Fukasaku * (Kyushu Univ. ), K. Hirose (Kyushu Univ.), Y. Kabata (Nagasaki Univ.), K. Teramoto ( Hiroshima Univ. )	A Gröbner basis-based approach to factor analysis	Face-to-face
16:20 – 16:50	K. Nagasaka * (Kobe Univ.)	Toward better approximate GCD of bivariate polynomials	Face-to-face

12月21日(Wed)

9:30 – 10:00	H. Murakami * (Tokyo Metropolitan Univ.)	Approximation Methods for Eigenproblems by Using Filters	Online
10:00 – 10:30	Ari Dwi Hartanto * (Universitas Gadjah Mada, Indonesia; a PhD student at Kanazawa Univ.), K. Ohara (Kanazawa Univ.),	On F5 Algorithm for Weyl Algebras over Fields with Valuations	Online
10:30 – 11:00	S. Narisawa * (Toho Univ. ), K. Shirayanagi (Toho Univ. )	Algorithms and implementations for crystals of K-hives of type A	Face-to-face
Break time			

11:10 – 11:40	F. Aoki * (Tokyo Univ. of Science), W. Takeda (Tokyo Univ. of Science ), H. Sekigawa (Tokyo Univ. of Science )	Triangulation of a square with angle-restricted lattice triangles	Face-to-face
11:40 – 12:10	Y. Yamanaka * (Tokyo Univ. of Science), W. Takeda (Tokyo Univ. of Science ), H. Sekigawa (Tokyo Univ. of Science )	Finding the sites from a Voronoi diagram in the Manhattan distance	Face-to-face
12:10 – 12:40	M. Sanuki * (Univ. of Tsukuba)	Stabilization of approximate GCD computations based on Barnett's theorem by preprocessing	Face-to-face

\* : Presenter