# Program Outline

**Date:**      August 1–13, 2009
**Venue:**     Conference Hall, 2nd floor, Hokkaido University
               Sapporo, Japan
**Organizing committee:**     Takuro Abe
                                 Hiroaki Terao (chair)
                                 Masahiko Yoshinaga
                                 Sergey Yuzvinsky
**Contents:**  The meeting will be divided into two parts. In the first part, we will have a series of lectures. Each series is composed of 3 one-hour lectures. In the second part, we will have several single talks.

## August 1st (Sat.)

9:45–10:45    Sergey Yuzvinsky (University of Oregon, USA)
                 Arrangements (Introduction)
11:15–12:15   Sergey Yuzvinsky (University of Oregon, USA)
                 Arrangements (Introduction)
14:15–15:15   Hal Schenck (University of Illinois, USA)
                 Arrangements and Computations
15:45–16:45   Alexander Varchenko (University of North Carolina
                 at Chapel Hill, USA)
                 Arrangements, Hypergeometric Integrals and Physics
17:00–18:00   Toshitake Kohno (University of Tokyo, Japan)
                 Arrangements and Topology

## August 2nd (Sun.)

9:45–10:45    Toshitake Kohno (University of Tokyo, Japan)
                 Arrangements and Topology
11:15–12:15   Richard Stanley (MIT, USA)
                 Arrangements and Combinatorics
14:15–15:15   Hal Schenck (University of Illinois, USA)
                 Arrangements and Computations
15:45–16:45   Alexander Varchenko (University of North Carolina
                 at Chapel Hill, USA)
                 Arrangements, Hypergeometric Integrals and Physics
17:00–18:00   Toshitake Kohno (University of Tokyo, Japan)
                 Arrangements and Topology

## August 3rd (Mon.)

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|---|---|
| 9:45–10:45 | Masahiko Yoshinaga (Kyoto University, Japan) <br> Arrangements and Algebraic Geometry |
| 11:15–12:15 | Richard Stanley (MIT, USA) <br> Arrangements and Combinatorics |
| 14:15–15:15 | Hal Schenck (University of Illinois, USA) <br> Arrangements and Computations |
| 15:45–16:45 | Alexander Varchenko (University of North Carolina at Chapel Hill, USA) <br> Arrangements, Hypergeometric Integrals and Physics |
| 17:00–18:00 | Masahiko Yoshinaga (Kyoto University, Japan) <br> Arrangements and Algebraic Geometry |

## August 4th (Tue.)

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|---|---|
| 9:45–10:45 | Masahiko Yoshinaga (Kyoto University, Japan) <br> Arrangements and Algebraic Geometry |
| 11:15–12:15 | Richard Stanley (MIT, USA) <br> Arrangements and Combinatorics |
| 14:15–15:15 | Kyoji Saito (Institute for the Physics and Mathematics of the Universe, Japan) <br> Arrangements and Singularities |
| 15:45–16:45 | Akimichi Takemura (University of Tokyo, Japan) <br> Arrangements and Statistics |
| 18:00–20:00 | Reception at the Aspen Hotel |

## August 5th (Wed.)

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| 9:45–10:45 | Akimichi Takemura (University of Tokyo, Japan) <br> Arrangements and Statistics |
| 11:15–12:15 | Akimichi Takemura (University of Tokyo, Japan) <br> Arrangements and Statistics |
| 14:15–15:15 | Kyoji Saito (Institute for the Physics and Mathematics of the Universe, Japan) <br> Arrangements and Singularities |
| 15:45–16:45 | Kyoji Saito (Institute for the Physics and Mathematics of the Universe, Japan) <br> Arrangements and Singularities |

## August 8th (Sat.)

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| 9:30– | Takashi Tsuboi (President of the Mathematical Society of Japan)<br>Welcome speech |
| 9:45–10:45 | Kazuhiko Aomoto (Nagoya University, Japan)<br>Hypersphere arrangement and imaginary cycles for hypergeometric<br>integrals |
| 11:15–12:15 | Christos Athanasiadis (University of Athens, Greece)<br>Hyperplane arrangements, random walks and eigenvalues |
| 14:15–15:15 | Anatoly Libgober (University of Illinois at Chicago, USA)<br>Characteristic varieties of arrangements with isolated non normal crossings |
| 15:45–16:45 | Eva Maria Feichtner (University of Bremen, Germany)<br>On tropical arrangement compactifications |
| 17:00–18:00 | Richard Rimanyi (University of North Carolina at Chapel Hill, USA)<br>Equivariant classes of matroid realization spaces |

## August 9th (Sun.)

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|---|---|
| 9:45–10:45 | Uli Walther (Purdue University, USA)<br>Bockstein maps in local cohomology Joint with Anurag Singh (Utah) |
| 11:15–12:15 | Claudio Procesi (Università di Roma, Italy)<br>From splines to the index theorem |
| 14:15–15:15 | Alexandru Suciu (Northeastern University, USA)<br>On the geometry and topology of cohomology jump loci |
| 15:45–16:45 | Igor Dolgachev (University of Michigan, USA)<br>Invariant theory of arrangements of hyperplanes |
| 17:00–17:30 | [short communication I]<br>Simona Settepanella (Scuola Superiore Sant'Anna, Italy)<br>Arrangements and political economics |
| 17:30–18:00 | [short communication II]<br>Luca Moci (Università di Roma, Italy)<br>An introduction to toric arrangements |
| 18:00–18:30 | [short communication III]<br>Yoshio Sano (RIMS, Japan)<br>Graphical Arrangements and Braid Arrangements<br>– Graph orientations and linear extensions – |

## August 10th (Mon.)

9:45–10:45    Anders Björner (Mittag-Leffler Institute, Sweden)
(presented by Axel Hultman (Royal Institute of
Technology, Sweden))
Random walks on complex hyperplane arrangements
and self-organizing libraries

11:15–12:15    Katsuhisa Mimachi (Tokyo Institute of Technology,
Japan)
Arrangements of hyperplanes and solutions of
the Fuchsian diferential equations free from
accessary parameters

14:15–15:15    Dai Tamaki (Shinshu University, Japan)
Iterated loop spaces and oriented matroids

15:45–16:45    Mario Salvetti (Università di Pisa, Italy)
Some applications of discrete Morse theory to
arrangements

17:00–18:00    Antoine Deza (McMaster University, Canada)
Hyperplane arrangements with large average diameter


## August 11th (Tue.)

9:45–10:15    [short communication IV]
Meital Eliyahu (Bar Ilan University, Israel)
A characterization of line arrangement whose fundamen-
tal group is a direct sum of free groups

10:15–10:45    [short communication V]
David Garber (Holon Institute of Technology, Israel)
A conjugation-free geometric presentation of fundamen-
tal groups of arrangements

11:15–12:15    Yoshishige Haraoka (Kumamoto University, Japan)
Arrangements of hyperplanes arising from sections of
rigid local systems

14:15–15:15    Hironobu Kimura (Kumamoto University, Japan)
On a problem of arrangements related to the hypergeo-
metric integrals of confluent type

15:45–16:45    Eduard Looijenga (Universiteit Utrecht, Netherlands)
Representations out of polydifferentials and the
KZ-system

17:00–17:30    [short communication VI]
Amanda Hager (University of Iowa, USA)
Freeness of arrangements and arrangement bundles

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| 17:30–18:00 | [short communication VII]<br>Miguel Angel Marco-Buzunariz (Instituto de Ciencias Matematicas Consejo Superior de Investigaciones Cientificas, Spain)<br>On Rybnikov's example |
| 18:00–18:30 | [short communication VIII]<br>Suho Oh (MIT, USA)<br>Bruhat order and hyperplane arrangements |
| 18:30–19:00 | [short communication IX]<br>Max Wakefield (US Naval Academy, USA)<br>Formality of subspace arrangements |

## August 12th (Wed.)

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|---|---|
| 9:45–10:45 | Michael Falk (Northern Arizona University, USA)<br>Vanishing products in Orlik–Solomon algebras |
| 11:15–12:15 | David Mond (University of Warwick, UK)<br>Some new free divisors associated with versal deformations and stable maps |
| 14:15–15:15 | Ichiro Shimada (Hiroshima University, Japan)<br>On lattice-theoretic invariants of curves on a surface |
| 15:45–16:45 | Jorge Vitório Pereira (IMPA, Brazil)<br>Webs and arrangements |
| 17:00–18:00 | Graham Denham (University of Western Ontario, Canada)<br>Critical sets of master functions: resonance and log derivations |

## August 13th (Thu.)

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|---|---|
| 9:45–10:45 | Daniel Cohen (Louisiana State University, USA)<br>Collision-free motion planning on surfaces |
| 11:15–12:15 | Tomohide Terasoma (The University of Tokyo, Japan)<br>Lines in Fermat hypersurfaces and $M_{0,n}$ |
| 14:15–15:15 | Ivan Cherednik (The University of North Carolina at Chapel Hill, USA)<br>Affine root systems and harmonic analysis |