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# Algebraic Biology

Invited Talks and Short Communications

Third International Conference, AB 2008  
Castle of Hagenberg, Austria, July/August 2008



## Preface

This booklet contains the invited talk by Kiyoshi Asai and the extended abstracts of the short communications session of the Third International Conference on Algebraic Biology (AB 2008). Jointly organized by the National Institute of Advanced Industrial Science and Technology (AIST), Tokyo, and the Research Institute for Symbolic Computation (RISC), Hagenberg, Austria, it was held from July 31 to August 2, 2008 in the Castle of Hagenberg.

Algebraic biology is an interdisciplinary forum for research on all aspects of applying symbolic computation in biology. The first conference on algebraic biology (AB 2005) was held during November 28–30, 2005 in Tokyo, the second during July 2–4, 2007 in Hagenberg. The AB conference series is intended as a bridge between life sciences and symbolic computation: On the one hand, new insights in biology are found by powerful symbolic methods; on the other hand, biological problems suggest new algebraic structures and algorithms. While this profile has been established in the previous proceedings, the papers in the present volume demonstrate the continuous growth of algebraic biology.

The short communications session was introduced this year for encouraging the presentation of interesting but “not-yet-polished” ideas, in particular unconventional proposals carrying the potential of creating new links between biology and symbolic computation. Despite the late announcement, six communications were submitted from five countries (Austria, France, Japan, Ukraine, USA), and five communications were accepted through a peer-viewing procedure by Program Committee members.

We hope the reader will enjoy the stimulating presentation of Kiyoshi Asai as well as the diversity of innovative ideas communicated in the extended abstracts.

July 2008

Bruno Buchberger  
Katsuhisa Horimoto  
Reinhard Laubenbacher  
Bud Mishra  
Georg Regensburger  
Markus Rosenkranz  
Hiroshi Yoshida



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Reinhard Laubenbacher	Virginia Bioinformatics Institute, USA
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Markus Rosenkranz	Johann Radon Institute for Computational and Applied Mathematics, Austria
Hiroshi Yoshida	Kyushu University, Japan

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Hiroshi Yoshida	Kyushu University, Japan
Ruriko Yoshida	University of Kentucky, USA

### Invited Speakers

Kiyoshi Asai	National Institute of Advanced Industrial Science and Technology, Japan
Charles Cantor	Sequenom, Inc., USA

### Tutorial Speakers

Tatsuya Akutsu	Kyoto University, Japan
Armin Biere	Johannes Kepler University of Linz, Austria
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Ken Fukuda	National Institute of Advanced Industrial Science and Technology, Japan
Tohru Natsume	Biomedical Information Research Center, Japan
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