

CONTEMPORARY MATHEMATICS

712

Local and Global Methods in Algebraic Geometry

Conference in Honor of Lawrence Ein's 60th Birthday
Local and Global Methods in Algebraic Geometry
May 12–15, 2016
University of Illinois at Chicago, Chicago, IL

Nero Budur
Tommaso de Fernex
Roi Docampo
Kevin Tucker
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Dedicated to Lawrence Ein on the occasion of his 60th birthday

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Preface

This volume results from the conference “Local and Global Methods in Algebraic Geometry” which was held at the University of Illinois at Chicago from May 12–15, 2016. The conference celebrated Lawrence Ein’s 60th birthday, honoring his longstanding contribution to the field by featuring talks on a broad array of topics in algebraic geometry and nearby fields. There were a total of twelve talks by close collaborators and students of Lawrence Ein and other experts in the field. The conference attracted about 150 participants, both junior and senior mathematicians, from around the country and abroad, reflecting the wide impact Lawrence Ein’s work has had in the community. The conference was made possible thanks to the support of the National Science Foundation via a Research and Training Grant and the assistance of the Department of Mathematics at the University of Illinois at Chicago.

This volume collects papers from speakers at the conference and other prominent members of the algebraic geometry community. The first article, written by a longtime collaborator of Lawrence Ein, gives an overview of his main contributions to the field. The other papers contribute to or report on recent progress on many topics, including birational geometry and moduli theory, geometry of surfaces, analytic and positive characteristic methods, singularity theory, hyper-Kähler geometry, rational points, and rational curves.

Nero Budur
Tommaso de Fernex
Roi Docampo
Kevin Tucker

Scientific program

Full details of the program are available at the conference homepage

<http://homepages.math.uic.edu/~ein60/>

Invited lectures

- Nero Budur (KU Leuven): Cohomology jump loci
- Tommaso de Fernex (University of Utah): Towards a link theoretic characterization of smoothness
- Robin Hartshorne (University of California at Berkeley): Simple D -module components of local cohomology modules
- Shihoko Ishii (University of Tokyo and Tokyo Woman's Christian University): Generic residual intersections and its applications
- Ngaiming Mok (University of Hong Kong): Geometric substructures on uniruled projective manifolds
- János Kollár (Princeton University): Celestial surfaces
- Robert Lazarsfeld (Stony Brook University): Measures of irrationality for hypersurfaces of large degree
- Mircea Mustață (University of Michigan): Hodge ideals and applications
- Mihai Păun (University of Illinois at Chicago): Singular Hermitian metrics on vector bundles and extension of pluricanonical forms
- Yum-Tong Siu (Harvard University): Revisiting analytic methods for algebraic geometric problems
- Karen Smith (University of Michigan): Abhyankar valuations in prime characteristic
- Claire Voisin (Pierre and Marie Curie University): Cubic fourfolds and O'Grady 10-dimensional examples

This volume contains the proceedings of the conference Local and Global Methods in Algebraic Geometry, held from May 12–15, 2016, at the University of Illinois at Chicago, in honor of Lawrence Ein's 60th birthday.

The articles cover a broad range of topics in algebraic geometry and related fields, including birational geometry and moduli theory, analytic and positive characteristic methods, geometry of surfaces, singularity theory, hyper-Kähler geometry, rational points, and rational curves.



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