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CONFERENCE ON COMPUTABILITY, COMPLEXITY AND RANDOMNESS

CO-SPONSORED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Isaac Newton Institute, Cambridge, UK

July 2–6, 2012

The conference "Computability, Complexity, and Randomness" was held at the Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom, on July 2–6, 2012. It was the seventh in a series of workshops that started in Córdoba, Argentina in 2004.

The members of the Program Committee included: Laurent Bienvenu (University of Paris 7, France), Péter Gács (Boston University, United States), Antonín Kučera (Charles University in Prague, Czech Republic), Elvira Mayordomo (University of Zaragoza, Spain, Co-chair), Wolfgang Merkle (University of Heidelberg, Germany, Co-chair), Nikolai Vereshchagin (Moscow State University, Russia), and Paul Vitányi (CWI Amsterdam, Netherlands). The conference was organized by Elvira Mayordomo (University of Zaragoza, Spain), and Wolfgang Merkle (University of Heidelberg, Germany). We also thank the staff of the Isaac Newton Institute for their excellent support. The meeting was sponsored by the Isaac Newton Institute (within the program "Semantics and Syntax: A Legacy of Alan Turing") and the Association for Symbolic Logic.

There were thirteen plenary talks:

George Barmpalias (Chinese Academy of Sciences, China), *Exact pairs for the ideal of the K-trivial sequences in the Turing degrees*.

Vasco Brattka (University of Cape Town, South Africa), *On the computational content of the Baire Category Theorem*.

Adam Day (University of California, Berkeley, USA), *Cupping with random sets*.

Rod Downey (Victoria University of Wellington, New Zealand), *Resolute sets and initial segment complexity*.

John Hitchcock (University of Wyoming, USA), *Limitations of efficient reducibility to the Kolmogorov random strings*.

Mathieu Hoyrup (Lorraine Research Laboratory in Computer Science and its Applications, France), *On the inversion of computable functions*.

Michal Koucký (Czech Academy of Sciences, Czech Republic), *The story of superconcentrators—the missing link*.

Andy Lewis (University of Leeds, UK), *The typical Turing degree*.

Jack Lutz (Iowa State University, USA), *Alan Turing in the twenty-first century: normal numbers, randomness, and finite automata*.

André Nies (University of Auckland, New Zealand), *Demuth randomness and its variants*.

Alexander Shen (Laboratoire d'Informatique Fondamentale de Marseille, France), *Topological arguments in Kolmogorov complexity*.

Steve Simpson (Pennsylvania State University, USA), *Propagation of partial randomness*.

Daniel Turetsky (Victoria University of Wellington, New Zealand), *SJT-hardness and pseudo-jump inversion*.

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The plenary talk by Rod Downey was also the closing talk of the Isaac Institute program "Semantics and Syntax: A Legacy of Alan Turing".

Eighteen contributed talks were presented. The slides and videos of all talks are available at the conference home page:

`http://www.newton.ac.uk/programmes/SAS/sasw04p.html`.

The Organizers
Elvira Mayordomo
Wolfgang Merkle