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Approximable Functions -- Computabilities of Fine-Continuous Functions -- The iRRAM: Exact Arithmetic in C++ -- The Uniformity Conjecture -- Admissible Representations of Limit Spaces -- Characterization of the Computable Real Numbers by Means of Primitive Recursive Functions -- Effective Fixed Point Theorem over a Non-Computably Separable Metric Space -- Computational Dimension of Topological Spaces -- Some Properties of the Effective Uniform Topological Space -- On Computable Metric Spaces Tietze-Urysohn Extension Is Computable -- Is the Linear Schrödinger Propagator Turing Computable? -- A Computable Spectral Theorem -- Report on Competition -- Exact Real Arithmetic Systems: Results of Competition.

Sommario/riassunto

The workshop on Computability and Complexity in Analysis, CCA 2000, was hosted by the Department of Computer Science of the University of Wales Swansea, September 17{19, 2000. It was the fourth workshop in a successful series of workshops: CCA'95 in Hagen, Germany, CCA'96 in Trier, Germany, and CCA'98 in Brno, Czech Republic. About 40 participants from the countries United Kingdom, Germany, Japan, Italy, Russia, France, Denmark, Greece, and Ireland contributed to the success of this meeting. Altogether, 28 talkswere p- sented in Swansea. These proceedings include 23 papers which represent a cro- section through recent research on computability and complexity in analysis. The workshop succeeded in bringing together people interested in computability and complexity aspects of analysis and in exploring connections with nume- cal methods, physics and, of course, computer science. It was rounded o by a number of talks and papers on exact computer arithmetic and by a competition of v e implemented systems. A report on this competition has been included in these proceedings. We would like to thank the authors for their contributions and the referees for their careful work, and we hope for further inspiring and constructive meetings of the same kind. April 2001 Jens Blanck Vasco Brattka Peter Hertling Organization CCA2000was hosted by the Department of Computer Science of the University of Wales Swansea and took place on September 17{19, 2000.