

From September 15 to September 21, A School on Combinatorics and Algorithmic Complexity was held in Barcelona. It was organized by X. Berenguer, J. Díaz and other members of the Facultat d'Informàtica of the Universitat Politècnica de Barcelona and also sponsored by la Caixa de Pensions. The School was located at a conference centre at the carrer Ganduxer, within easy reach of the lively city centre thanks to the breathtaking efficiency of the local taxi drivers. There were about 65 participants from 15 countries, 30 of whom came from Spain or Italy.

The School was announced as the successor of a similar School held in Udine last year. Its length in days was shorter, but this was more than compensated for by a heavy program of 35 hours of lectures. Whereas many lectures in Udine were of an introductory nature, most of the Barcelona lectures dealt with recent and rather advanced results. If the participants were overwhelmed by these, that was certainly not apparent at the conference dinners and its aftermath, where various eloquent toasts were proposed to further summer schools in this area.

To the great disappointment of the organizers, one of the invited lecturers, J. Nešetřil of Charles University (Prague), was refused permission to attend the School at the last instant. The first lecture in the School was given by G. Ausiello of the University of Roma, who spoke about various ways to measure the relative computational complexity of NP-hard optimization problems.

L. G. Valiant of the University of Edinburgh discussed his very recent work on a scheme for fast parallel communication and talked about the complexity of counting problems and about algebraic complexity theory in general. R. M. Karp of the University of California at Berkeley discussed his probabilistic analysis of connectivity and matching algorithms, and gave a survey of recent issues in machine based complexity theory. P. Flajolet of IRIA gave a survey of his recent work on the analysis of dynamic data structures. L. Harper of the University of California at Riverside used tools from category theory in his talks on the global theory of flows in networks. N. Christofides of Imperial College (London) described Lagrangean and state space relaxations for combinatorial optimization problems and their application to routing problems. Finally I talked about recent developments around the ellipsoidal method for linear programming and discussed some new results in scheduling theory.

The program of the School also included shorter talks by X. Berenguer, U. Vishkin, P. Bertolazzi, A.S. Fraenkel, O. d'Antona, J. Barcelo, and S. de Gregorio and a session for the presentation of open problems that should keep both participants and lecturers happily occupied while waiting for the next installment.

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