PRAGMATIC 2010

The twelfth edition of the PRAGMATIC Summer School took place in Catania between August 30 – September 17, 2010. The lecturers were Prof. Paltin Ionescu (University of Bucharest) and Prof. Jarosław Antoni Wiśniewski (University of Warsaw), assisted by Dr. José Carlos Sierra (ICMAT Madrid) and Dr. Luis Eduardo Solá-Conde (URJC Madrid). The school was attended by eighteen students coming from Italy, Iran, Republic of Korea, Poland, Romania and Spain.

The lectures were devoted to some applications stemming from Mori Theory. One set of lectures (covered by Ionescu and Sierra) concerned various problems of classical projective geometry (e.g. defective manifolds, manifolds covered by lines or rationally connected by conics, geometry of secants and projections) in which deformation theory of rational curves is essential. The other set (covered by Wiśniewski and Solá-Conde) was about the structure of various cones of curves or divisors, Cox rings and their interaction with toric geometry, group actions and singularities.

During the first week, the lecturers have presented the general panorama and many open problems together with a motivation and state of the art details. By the end of the week, students have grouped into working teams and have made their personal choice of a suitable problem. During the remaining time of the school, each team worked under appropriate guidance and some more lectures were given, on request. In the last day, each team presented to the entire audience their progress on the chosen problem.

The present volume of *Le Matematiche* contains three of the papers that have materialized since the end of the school. Two more papers will appear elsewhere.

It is our pleasure to thank the local organizers Alfio Ragusa, Giuseppe Zappalà, Salvatore Giuffrida, Renato Maggioni and Rosario Strano for doing their best to ensure excellent working conditions and a pleasant atmosphere.

Paltin Ionescu

Jarosław Antoni Wiśniewski