

Introduction

This special issue is devoted to the 7th edition of the Summer School on Methods and Models of Kinetic Theory (M&MKT 2014), held in Porto Ercole (Tuscany, Italy), on June 8-14, 2014, with the participation of about fifty young and senior researchers, coming from several countries. The School is mainly aimed at presenting the updated state-of-the-art for important topics of significant interest in the field of kinetic theory and of its applications, considering both theoretical and numerical methods, relevant to the true Boltzmann equation as well as to other kinetic models. It is addressed especially to Ph.D. students, Post-Docs, and young researchers with some past experience, or else with a new interest, in these areas of Mathematical Physics.

The 7th edition of the School was focused on three main courses of 6 hours each,

1. Large-time behavior in Fokker-Planck equations,
2. Boundary layers and internal layers in fluid dynamics and kinetic theories,
3. Non-equilibrium mixtures of gases: modelling and computation,

which were delivered, respectively, by three distinguished experts in the field, Anton Arnold (Wien), Marco Sammartino (Palermo), Srboľjub Simic (Novi Sad).

Beside that, four mini-courses were delivered by V. Bagland (Clermont-Ferrand), N. Bernhoff (Karlstad), M. Bisi (Parma), and F. Salvarani (Pavia).

Further information on the school, including the list of participants, can be obtained from the web site:

<http://calvino.polito.it/~mmkt>

In the frame of the aims and scopes of this Journal, the present issue publishes three extensive survey papers summarizing the contents of the three main courses of the 2014 edition.

The Scientific Committee of the School

- K. Aoki, Kyoto University, Japan
- L. Desvillettes, École Normale Supérieure de Cachan, France
- G. Frosali, Università degli Studi di Firenze, Italy
- R. Monaco, Politecnico di Torino, Italy
- C. Negulescu, Université Paul Sabatier, France
- G. Spiga, Università degli Studi di Parma, Italy