

Preface

This volume presents the proceedings of the second international conference on Particle Systems and Partial Differential Equations, “PS-PDEs II”, held at the Centre of Mathematics of the University of Minho, Braga, Portugal, from 12 to 13 December 2013.

The purpose of this second meeting was to bring together renowned researchers working in the fields of probability and partial differential equations, to present their recent scientific results in both areas and to discuss some of their topics of expertise. Additionally, the meeting was intended to present to a vast and varied public, including young researchers, the subject of interacting particle systems, its underlying motivation, and its relation to partial differential equations.

The present volume includes the lecture notes from the mini-courses given by Professor Cédric Bernardin (University of Nice) on “Diffusion of energy in chains of oscillators with bulk noise”, and by Professor Vincent Giovangigli (École Polytechnique) on “Dissipative Reactive Fluid Models from the Kinetic Theory”. It also features 13 contributed papers written by some of the participants of the conference on highly interesting topics in the fields of probability theory, partial differential equations and kinetic theory.

We believe that this volume will be of great interest to probabilists, analysts and also to those mathematicians in general whose work focuses on topics in mathematical physics, stochastic processes and differential equations, as well as to those physicists who work in statistical mechanics and kinetic theory.

We would like to take this opportunity to give our special thanks to all the participants for their active contributions to the success of this meeting.

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We very much hope you enjoy reading this book!

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