

PREFACE

The *International Conference Zaragoza-Pau on Mathematics* was organized by the *Departamento de Matemática Aplicada*, the *Departamento de Métodos Estadísticos* and the *Departamento de Matemáticas*, all of them from the *Universidad de Zaragoza* (Spain), and the *Laboratoire de Mathématiques Appliquées et leurs Applications*, from the *Université de Pau et des Pays de l'Adour* (France). This conference has normally been held every two years since 1989. In this edition, the conference scope has been extended to Mathematics, in general, to integrate the research done in our universities by the groups working in Pure Mathematics. The aim of this conference is to present recent advances in Applied Mathematics, Statistics and Pure Mathematics, putting special emphasis on subjects linked to petroleum engineering and environmental problems.

The Twelfth Conference took place in Jaca (Spain) from 17th to 19th September 2012. The official opening ceremony was graced by the presence of the Chancellor of the University of Zaragoza, Rector Mgfc. D. Manuel J. López Pérez, and the Chancellor of the University of Pau, M. le Président Mohamed Amara. During those three days, 60 mathematicians, coming from different universities, research institutes or the industrial sector, attended 9 plenary lectures, 43 contributed talks and a poster session with 2 posters.

The principal talks were about theoretical and numerical analysis of deterministic models described by differential equations, statistics and stochastics processes, surface approximation and image analysis. At the same time, there was also a session devoted to Algebra and Geometry. These proceedings contain 21 papers based on the corresponding invited lectures along with 4 full length refereed research papers.

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The next Conference Zaragoza-Pau will be held in Jaca from 15th to 17th September 2014. All of you are cordially invited to participate in this event.

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The Editors

María Cruz López de Silanes
Manuel Palacios
Departamento de Matemática Aplicada
Universidad de Zaragoza

Gerardo Sanz
Departamento de Métodos Estadísticos
Universidad de Zaragoza

Étienne Ahusborde
Chérif Amrouche
Laboratoire de Mathématiques Appliquées
et leurs Applications
Université de Pau et des Pays de l'Adour