

Contents

FOREWORD	vii
PHOTOGRAPH OF PROF. MADAUNE-TORT	ix

COMMUNICATIONS

CHÉRIF AMROUCHE AND MARÍA ÁNGELES RODRÍGUEZ-BELLIDO On the regularity for the Laplace equation and the Stokes system	1
BORIS ANDREIANOV, ROBERT EYMARD, MUSTAPHA GHILANI AND NOUZHA MARHRAOUI On Intrinsic Formulation and Well-posedness of a Singular Limit of Two-phase Flow Equations in Porous Media	21
CAROLINE BAUZET, JACQUES GIACOMONI AND GUY VALLET On a class of quasilinear Barenblatt equations	35
JACQUELINE FLECKINGER Estimates of the solutions of some asymmetric problem defined on \mathbb{R}^N , $N \geq 3$	53
GLORIA AGUILAR AND LAURENT LÉVI On the well-posedness for the coupling of multidimensional quasilinear diffusion-transport equations	65
S. ANTONTSEV AND S. SHMAREV Energy Solutions of Evolution Equations with Nonstandard Growth Conditions	85
C.A. STUART Localized sequences of approximate critical points	113

BÉNÉDICTE ALZIARY AND PETER TAKÁČ

Option Pricing for Stocks with Dividends:

An Analytic Approach by PDEs125

JACQUES TORT

An inverse diffusion problem in a degenerate parabolic equation 137

Foreword

MONIQUE MADAUNE-TORT has arrived at Université de Pau et des Pays de l'Adour (UPPA), in 1976 as “assistante agrégée”. She remained attached to this university during her entire career. She has passed her 3rd-cycle thesis in 1976 and her habilitation on the 29 april 1981 under the guidance of Professor Jean Genet.

Most of her research work has been dedicated to the mathematical analysis of conservation laws described by scalar quasilinear equations or systems. Such conservation laws arise in the modelling of multiphase flows in porous media (especially in the oil industry), in models of biomathematic (models of chemotaxis for instance) and nonlinear elasticity (models of Biot). She has studied qualitative properties of solutions of evolutionary equations of parabolic and hyperbolic types of first and second orders, small parameters problems with singular perturbations in time and/or space, asymptotic behaviour of solutions, to mention only the most important topics in her scientific interests without trying to give an exhaustive collection of subjects.

From her wide field of research interests, there is a large collection of scientific publications of rich diversity including the very original and popular monograph¹ with her colleague Professor Gérard Gagneux, where they present very interesting applications of Functional Analysis and Measure Theory. This book and her publications on Porous Media and Oil Industry are highly regarded by the Applied Mathematics community. Her rigorous approach and scientist honesty are widely appreciated by her collaborators and her students. During her career at UPPA, she has directed a large number of doctoral students towards their PHD thesis or HDR, among them Gloria Aguilar, Mostafa Bahloul, Ahmed Benaouda, Agnes Boy-Dalverny, Marc Falliero, Brahim Hajouj, Marie-Josée Jasor, Julien Jimenez, Laurent Lévi, Patrick Saint-Macary, Fabrice Peyroutet, Guy Vallet.

In spite of her humbleness and modesty, she was also the funding actor of the trans-Pyrenean cooperation with the University of Zaragoza at both research and teaching levels, anticipating the current partnership with crossborder institutes in Mathematics.

As a person of firm conviction and integrity, she has made significant contributions to the life of her university, more specifically to the Mathematics Department. In particular, she was in charge of the proposal of the Master program in Mathematics in the periods

¹G. Gagneux and M. Madaune-Tort, *Analyse mathématique de modèles non linéaires de l'ingénierie pétrolière*, S.M.A.I. -Mathématiques et Applications, **22**, Springer-Verlag 1996.

2004-2007 and 2007-2011 and director of the program “préparation au C.A.P.E.S externe de Mathématiques”. She was also a member and during several periods the head of several research groups and research centers (Conseil Scientifique de l’UPPA, Conseil de la Recherche des Sciences et Techniques, Équipe de Recherche Technologique in connection with the oil company Total). More recently, she was the director of the federation of research CNRS IPRA-FR 2952 since January 2009 to April 2012.

Her readiness and dedication have helped also other establishments at university level (her expertise in different University councils), at regional level (I.U.F.M. d’Aquitaine) and at national level (her expertise Ministère de l’Enseignement Supérieur, Inspection Générale).

ON THE BEHALF OF THE SCIENTIFIC COMMITTEE,

Bénédicte ALZIARY-CHASSAT
María Cruz LÓPEZ DE SILANES
Jacques GIACOMONI
Laurent LÉVI
Peter TAKÁČ
Guy VALLET



Figure 1.— Monique with some colleagues at the 11th International Conference Zaragoza-Pau on Applied Mathematics and Statistics (2010).

