

METHODS AND APPLICATIONS OF ANALYSIS

June 2013

Volume 20, Number 2

Special issue dedicated to the memory of A. V. Kazhikhov

Guest Editors: Didier Bresch & Zhouping Xin

Associated Guest Editors: Céline Acary-Robert & Marguerite Gisclon

CONTENTS

- i **Preface**
Guest Editors and Associated Guest Editors
- 089 **Hydrodynamic Models of Self-organized Dynamics: Derivation and Existence Theory**
Pierre Degond, Jian-Guo Liu, Sebastien Motsch and Vladislav Panferov
- 115 **Scaling and Singular Limits in the Equations of Continuum Fluid Mechanics**
Eduard Feireisl
- 141 **Existence of Global Strong Solution for the Compressible Navier-Stokes System and the Korteweg System in Two-dimension**
Boris Haspot
- 165 **A Free Boundary Model for Korteweg Fluids as a Limit of Barotropic Compressible Navier-Stokes Equations**
Stéphane Labbé and Emmanuel Maitre
- 179 **Viscous Compressible Multi-Fluids: Modeling and Multi-D Existence**
Alexander E. Mamontov and Dmitriy A. Prokudin
- 197 **Five Open Problems in Compressible Mathematical Fluid Dynamics**
Denis Serre