

Cambridge University Press

978-1-107-60925-9 - Mathematical Aspects of Fluid Mechanics

Edited by James C. Robinson, José L. Rodrigo and Witold Sadowski

Table of Contents

[More information](#)

Contents

<i>Preface</i>	<i>page</i> ix
<i>List of Contributors</i>	xi
1 Towards fluid equations by approximate deconvolution models	1
<i>L.C. Berselli</i>	
2 On flows of fluids described by an implicit constitutive equation characterized by a maximal monotone graph	23
<i>M. Bulíček, P. Gwiazda, J. Málek, K.R. Rajagopal, & A. Świerczewska-Gwiazda</i>	
3 A continuous model for turbulent energy cascade	52
<i>A. Cheskidov, R. Shvydkoy, & S. Friedlander</i>	
4 Remarks on complex fluid models	70
<i>P. Constantin</i>	
5 A naive parametrization for the vortex-sheet problem	88
<i>A. Castro, D. Córdoba, & F. Gancedo</i>	
6 Sharp and almost-sharp fronts for the SQG equation	116
<i>C.L. Fefferman</i>	
7 Feedback stabilization for the Navier–Stokes equations: theory and calculations	130
<i>A.V. Fursikov & A.A. Kornev</i>	
8 Interacting vortex pairs in inviscid and viscous planar flows	173
<i>T. Gallay</i>	

Cambridge University Press

978-1-107-60925-9 - Mathematical Aspects of Fluid Mechanics

Edited by James C. Robinson, José L. Rodrigo and Witold Sadowski

Table of Contents

[More information](#)

viii

Contents

- | | | |
|-----------|---|-----|
| 9 | Stretching and folding diagnostics in solutions of the three-dimensional Euler and Navier–Stokes equations | 201 |
| | <i>J.D. Gibbon & D.D. Holm</i> | |
| 10 | Exploring symmetry plane conditions in numerical Euler solutions | 221 |
| | <i>R.M. Kerr & M.D. Bustamante</i> | |
| 11 | On the decay of solutions of the Navier–Stokes system with potential forces | 235 |
| | <i>I. Kukavica</i> | |
| 12 | Leray–Hopf solutions to Navier–Stokes equations with weakly converging initial data | 251 |
| | <i>G. Seregin</i> | |