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Monograph

SeriesCISM International Centre for Mechanical
Sciences**Engineering : Engineering Fluid Dynamics**Le Bars, Michael, Lecoanet, Daniel (Eds.), CNRS, Aix Marseille University, Centrale Marseille, Marseille,
France

Fluid Mechanics of Planets and Stars

- Includes fundamental aspects of fluid mechanics and applications to geo- and astrophysical problems, in order to highlight the link between the models and their various applications
- Provides the basic information necessary for students to embark on research in geo- or astrophysical fluid mechanics, as well as a coherent review of the most recent results for advanced researchers
- Written by leading experts

This book explores the dynamics of planetary and stellar fluid layers, including atmospheres, oceans, iron cores, and convective and radiative zones in stars, describing the different theoretical, computational and experimental methods used to study these problems in fluid mechanics, including the advantages and limitations of each method for different problems. This scientific domain is by nature interdisciplinary and multi-method, but while much effort has been devoted to solving open questions within the various fields of mechanics, applied mathematics, physics, earth sciences and astrophysics, and while much progress has been made within each domain using theoretical, numerical and experimental approaches, cross-fertilizations have remained marginal. Going beyond the state of the art, the book provides readers with a global introduction and an up-to-date overview of relevant studies, fully addressing the wide range of disciplines and methods involved. The content builds on the CISM course "Fluid mechanics of planets and stars", held in April 2018, which was part of the research project FLUDYCO, supported by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program.

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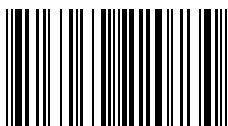
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