

1. Record Nr.	UNINA9910785935503321
Autore	Andreev Victor K.
Titolo	Mathematical models of convection [[electronic resource] /] / by Victor K. Andreev ... [et al.]
Pubbl/distr/stampa	Berlin ; ; Boston, : De Gruyter, 2012
ISBN	9786613940179 1-283-62772-8
Descrizione fisica	1 online resource (436 p.)
Collana	De Gruyter Studies in Mathematical Physics ; ; 5
Classificazione	UF 4000
Altri autori (Persone)	AndreevV. K (Viktor Konstantinovich)
Disciplina	536/.250151
Soggetti	Heat - Convection - Mathematical models Thermodynamics - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front matter -- Preface -- List of contributing authors -- Contents -- Chapter 1. Equations of fluid motion -- Chapter 2. Conditions on the interface between fluids and on solid walls -- Chapter 3. Models of convection of an isothermally incompressible fluid -- Chapter 4. Hierarchy of convection models in closed volumes -- Chapter 5. Invariant submodels of microconvection equations -- Chapter 6. Group properties of equations of thermodiffusion motion -- Chapter 7. Stability of equilibrium states in the Oberbeck-Boussinesq model -- Chapter 8. Small perturbations and stability of plane layers in the microconvection model -- Chapter 9. Numerical simulation of convective flows under microgravity conditions -- Chapter 10. Convective flows in tubes and layers -- Bibliography -- Index
Sommario/riassunto	Phenomena of convection are abundant in nature as well as in industry. This volume addresses the subject of convection from the point of view of both, theory and application. While the first three chapters provide a refresher on fluid dynamics and heat transfer theory, the rest of the book describes the modern developments in theory. Thus it brings the reader to the ""front"" of the modern research. This monograph provides the theoretical foundation on a topic relevant to metallurgy, ecology, meteorology, geo-and astrophysics, aerospace industry, chemistry, crystal physics, and many other fiel

