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| Autore | Lappa Marcello |
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| Soggetti | Heat - Transmission Rotating masses of fluid |
| 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 | Rotating Thermal Flows; Contents; Preface; Acknowledgements; Chapter 1 Equations, General Concepts and Nondimensional Numbers; 1.1 The Navier-Stokes and Energy Equations; 1.1.1 The Continuity Equation; 1.1.2 The Momentum Equation; 1.1.3 The Total Energy Equation; 1.1.4 The Budget of Internal Energy; 1.1.5 Closure Models; 1.2 Some Considerations about the Dynamics of Vorticity; 1.2.1 Vorticity and Circulation; 1.2.2 Vorticity in Two Dimensions; 1.2.3 Vorticity Over a Spherical Surface; 1.2.4 The Curl of the Momentum Equation; 1.3 Incompressible Formulation; 1.4 Buoyancy Convection 1.4.1 The Boussinesq Model 1.4.2 The Grashof and Rayleigh Numbers; 1.5 Surface-Tension-Driven Flows; 1.5.1 Stress Balance; 1.5.2 The Reynolds and Marangoni Numbers; 1.5.3 The Microgravity Environment; 1.6 Rotating Systems: The Coriolis and Centrifugal Forces; 1.6.1 Generalized Gravity; 1.6.2 The Coriolis, Taylor and Rossby Numbers; 1.6.3 The Geostrophic Flow Approximation; 1.6.4 The Taylor-Proudman Theorem; 1.6.5 Centrifugal and Stratification Effects: The Froude Number; 1.6.6 The Rossby Deformation Radius; 1.7 Some Elementary Effects due to Rotation 1.7.1 The Origin of Cyclonic and Anticyclonic flows 1.7.2 The Ekman |

Layer; 1.7.3 Ekman Spiral; 1.7.4 Ekman Pumping; 1.7.5 The Stewartson Layer; Chapter 2 Rayleigh-B enard Convection with Rotation; 2.1 Rayleigh-B enard Convection with Rotation in Infinite Layers; 2.1.1 Linear Stability Analysis; 2.1.2 Asymptotic Analysis; 2.2 The Koppers-Lortz Instability and Domain Chaos; 2.3 Patterns with Squares; 2.4 Typical Phenomena for $Pr = 1$ and Small Values of the Coriolis Number; 2.4.1 Spiral Defect Chaos and Chiral Symmetry; 2.4.2 The Interplay between the Busse Balloon and the KL Instability
2.5 The Low- Pr Hopf Bifurcation and Mixed States 2.5.1 Standing and Travelling Rolls; 2.5.2 Patterns with the Symmetry of Square and Hexagonal Lattices; 2.5.3 Other Asymptotic Analyses; 2.5.4 Nature and Topology of the Bifurcation Lines in the Space of Parameters (ϵ, Pr); 2.6 Laterally Confined Convection; 2.6.1 The First Bifurcation and Wall Modes; 2.6.2 The Second Bifurcation and Bulk Convection; 2.6.3 Square Patterns Driven by Nonlinear Interactions between Bulk and Wall Modes; 2.6.4 Square Patterns as a Nonlinear Combination of Bulk Fourier Eigenmodes; 2.6.5 Higher-Order Bifurcations
2.7 Centrifugal Effects 2.7.1 Stably Thermally Stratified Systems; 2.7.2 Interacting Thermogravitational and Centrifugally Driven Flows; 2.7.3 The Effect of the Centrifugal Force on Domain Chaos; 2.8 Turbulent Rotating RB Convection; 2.8.1 The Origin of the Large-scale Circulation; 2.8.2 Rotating Vortical Plumes; 2.8.3 Classification of Flow Regimes; 2.8.4 Suppression of Large-scale Flow and Heat Transfer Enhancement; 2.8.5 Prandtl Number Effects; Chapter 3 Spherical Shells, Rossby Waves and Centrifugally Driven Thermal Convection; 3.1 The Coriolis Effect in Atmosphere Dynamics
3.1.1 The Origin of the Zonal Winds

Sommario/riassunto

"In this context, it is expressly shown how the aforementioned isomorphism between small and large scale phenomena becomes beneficial to the definition and ensuing development of an integrated comprehensive framework allowing the reader to understand and assimilate the underlying quintessential mechanisms without requiring, however, familiarity with specific literature on the subject"--

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| 2. Record Nr. | UNINA9910136284303321 |
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| ISBN | 9782889193097 |
| Descrizione fisica | 1 online resource (213 pages) : illustrations; digital, PDF file(s) |
| Collana | Frontiers Research Topics |
| Soggetti | Animal Biochemistry Human Anatomy & Physiology Health & Biological Sciences |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
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| Nota di bibliografia | Includes bibliographical references. |
| Sommario/riassunto | Non-coding RNAs (ncRNAs), and in particular microRNAs are rapidly becoming the focus of research interest in numerous basic and translational fields, and their importance for many aspects in brain functioning merits special discussion. The wide-scope, multi-targeted and highly efficient manner of ncRNA regulatory activities draws attention to this topic by many, but the available research tools and experimental protocols are still insufficient, and their importance for many aspects in brain functioning merits special discussion. This Research Topic is focused on the search for and exploration of those non-coding RNAs whose activities modulate the multi-levelled functions of the eukaryotic brain. It will strive to cover novel approaches for identifying and establishing ncRNA-target relationships, reports of the affected pathways, inherited and acquired changes in ncRNA functioning and the use of ncRNA mimics and blockade tools for interference with their functions in health and disease. Non-coding RNAs are here to stay, and their impact on our brain's functioning at the physiology, cell biology, behaviour and immune levels is worth an in-depth journey. |

