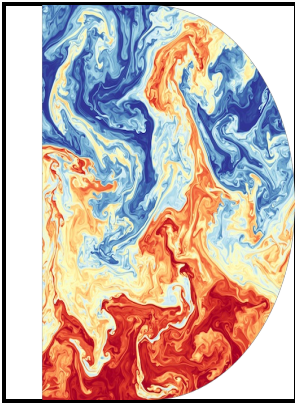# Spectral methods in fluid dynamics

Springer-Verlag - Spectral Methods

Description: -
-
Fluid dynamics.
Numerical analysis.
Differential equations, Partial -- Numerical solutions.Spectral methods
in fluid dynamics
-
Springer series in computational physicsSpectral methods in fluid
dynamics
Notes: Includes bibliographical references (p. [529]-559) and index.
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A Direct Spectral Method for Determination of Flows over Corrugated Boundaries

Unlike , spectral methods are global methods, where the computation at any given point depends not only on information at neighboring points, but on information from the entire domain.

Spectral element method

Other Polynomial Approximations -- 9.

Spectral methods

Mesh effects for rossby waves. Spectral stochastic methods are probabilistic in nature, and are consequently rooted in the rich mathematical foundation associated with probability and measure spaces.

Numerical methods in fluid mechanics

The Alternating Schwarz Method -- 13. Specifically covered are cases in the presence of a strong magnetic field and with a sufficiently large Ginzburg—Landau parameter kappa. First, there is the Hybrid-Collocation-Galerkin method HCGM , which applies collocation at the interior Lobatto points and uses a Galerkin-like integral procedure at element interfaces.

A spectral element method for fluid dynamics: Laminar flow in a channel expansion

The solution within each element is interpolated with a polynomial of usually low order. Again, the unknowns are the solution at the collocation points.

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