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Autore	Vazquez Rafael
Titolo	Control of turbulent and magnetohydrodynamic channel flows [[electronic resource]] : boundary stabilization and state estimation // Rafael Vazquez, Miroslav Krstic
Pubbl/distr/stampa	Boston, : Birkhauser, c2008
ISBN	1-281-11731-5 9786611117313 0-8176-4699-X
Edizione	[1st ed. 2008.]
Descrizione fisica	1 online resource (220 p.)
Collana	Systems & control: foundations & applications
Altri autori (Persone)	KrsticMiroslav
Disciplina	532 532.0527
Soggetti	Boundary layer Magnetohydrodynamics Turbulence Electronic books.
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 (p. [199]-207) and index.
Nota di contenuto	Thermal-Fluid Convection Loop: Boundary Stabilization -- Thermal-Fluid Convection Loop: Boundary Estimation and Output-Feedback Stabilization -- 2D Navier–Stokes Channel Flow: Boundary Stabilization -- 2D Navier–Stokes Channel Flow: Boundary Estimation -- 3D Magnetohydrodynamic Channel Flow: Boundary Stabilization -- 3D Magnetohydrodynamic Channel Flow: Boundary Estimation -- 2D Navier–Stokes Channel Flow: Stable Flow Transfer -- Open Problems.
Sommario/riassunto	This monograph presents new constructive design methods for boundary stabilization and boundary estimation for several classes of benchmark problems in flow control, with potential applications to turbulence control, weather forecasting, and plasma control. The basis of the approach used in the work is the recently developed continuous backstepping method for parabolic partial differential equations, expanding the applicability of boundary controllers for flow systems from low Reynolds numbers to high Reynolds number conditions. Efforts in flow control over the last few years have led to a wide range

of developments in many different directions, but most implementable developments thus far have been obtained using discretized versions of the plant models and finite-dimensional control techniques. In contrast, the design methods examined in this book are based on the "continuum" version of the backstepping approach, applied to the PDE model of the flow. The postponement of spatial discretization until the implementation stage offers a range of numerical and analytical advantages. Specific topics and features: * Introduction of control and state estimation designs for flows that include thermal convection and electric conductivity, namely, flows where instability may be driven by thermal gradients and external magnetic fields. * Application of a special "backstepping" approach where the boundary control design is combined with a particular Volterra transformation of the flow variables, which yields not only the stabilization of the flow, but also the explicit solvability of the closed-loop system. * Presentation of a result unprecedented in fluid dynamics and in the analysis of Navier–Stokes equations: closed-form expressions for the solutions of linearized Navier–Stokes equations under feedback. * Extension of the backstepping approach to eliminate one of the well-recognized root causes of transition to turbulence: the decoupling of the Orr–Sommerfeld and Squire systems. **Control of Turbulent and Magnetohydrodynamic Channel Flows** is an excellent reference for a broad, interdisciplinary engineering and mathematics audience: control theorists, fluid mechanicians, mechanical engineers, aerospace engineers, chemical engineers, electrical engineers, applied mathematicians, as well as research and graduate students in the above areas. The book may also be used as a supplementary text for graduate courses on control of distributed-parameter systems and on flow control. .

2. Record Nr.	UNIORUON00072819
Titolo	Ethiopian studies dedicated to Wolf Leslau on the occasion of his seventy-fifth birthday November 14th, 1981 by friends and colleagues / Edited by Stanislav Segert and Andras J.E Bodrogligeti
Pubbl/distr/stampa	Wiesbaden, : Otto Harrassowitz, 1983
ISBN	34-470-2314-7
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Disciplina	963
Soggetti	Archeologia - Etiopia Arte - Etiopia ETIOPIA - Storia ETNOLOGIA - Etiopia Lingua amarica - Studi LINGUA GE'EZ - Studi LINGUE CUSCITICHE - Studi LINGUE SEMITICHE - Lessico MUSICA ETIOPICA
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia