1. Record Nr. UNICAMPANIASUN0114586

Autore	Tuy, Hoang
Titolo	Convex analysis and global optimization / Hoang Tuy
Pubbl/distr/stampa	[Cham], : Springer, 2016
Edizione	[2. ed]
Descrizione fisica	XVI, 505 p. : ill. ; 24 cm
Soggetti	49-XX - Calculus of variations and optimal control; optimization [MSC 2020] 65K10 - Numerical optimization and variational techniques [MSC 2020] 90-XX - Operations research, mathematical programming [MSC 2020]
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9910807220503321

Autore	Bedrossian Jacob <1984->
Titolo	Dynamics near the subcritical transition of the 3D Couette flow I : below threshold case / / Jacob Bedrossian, Pierre Germain, Nader Masmoudi
Pubbl/distr/stampa	Providence, RI : , : American Mathematical Society, , [2020] ©2020
ISBN	1-4704-6251-6
Descrizione fisica	1 online resource (v, 158 pages)
Collana	Memoirs of the American Mathematical Society ; ; Number 1294
Classificazione	35B3576E0576E3076F0676F1035B4076F25
Disciplina	532.58
Soggetti	Inviscid flow Mixing Shear flow Stability Three-dimensional modeling Damping (Mechanics) Viscous flow - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa

Livello bibliografico	Monografia
Note generali	"July 2020, volume 266, number 1294 (fourth of 6 numbers)."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Outline of the proof -- Regularization and continuation -- High norm estimate on Q2 -- High norm estimate on Q3 -- High norm estimate on Q1/0 -- High norm estimate on Q1/[not equal] -- Coordinate system controls -- Enhanced dissipation estimates -- Sobolev estimates.
Sommario/riassunto	"We study small disturbances to the periodic, plane Couette flow in the 3D incompressible Navier-Stokes equations at high Reynolds number Re. We prove that for sufficiently regular initial data of size [epsilon] [less than or equal to] c0Re-1 for some universal c0 > 0, the solution is global, remains within O(c0) of the Couette flow in L2, and returns to the Couette flow as t [right arrow] [infinity]. For times t >/-Re1/3, the streamwise dependence is damped by a mixing-enhanced dissipation effect and the solution is rapidly attracted to the class of "2.5 dimensional" streamwise-independent solutions referred to as streaks. Our analysis contains perturbations that experience a transient growth of kinetic energy from O(Re-1) to O(c0) due to the algebraic linear instability known as the lift-up effect. Furthermore, solutions can exhibit a direct cascade of energy to small scales. The behavior is very different from the 2D Couette flow, in which stability is independent of Re, enstrophy experiences a direct cascade, and inviscid damping is dominant (resulting in a kind of inverse energy cascade). In 3D, inviscid damping will play a role on one component of the velocity, but the primary stability mechanism is the mixing-enhanced dissipation. Central to the proof is a detailed analysis of the interplay between the stabilizing effects of the mixing and enhanced dissipation and the destabilizing effects of the lift-up effect, vortex stretching, and weakly nonlinear instabilities connected to the non-normal nature of the linearization"--