

1. Record Nr.	UNINA9910811644203321
Autore	Constantin P (Peter), <1951->
Titolo	Attractors representing turbulent flows // P. Constantin, C. Foias, and R. Temam
Pubbl/distr/stampa	Providence, Rhode Island, United States : , : American Mathematical Society, , 1985 ©1985
ISBN	1-4704-0727-2
Descrizione fisica	1 online resource (79 p.)
Collana	Memoirs of the American Mathematical Society, , 0065-9266 ; ; Volume 53, Number 314
Disciplina	532/.0527
Soggetti	Turbulence Navier-Stokes equations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"January 1985, Volume 53, Number 314 (first of 5 numbers)"--Cover.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	""TABLE OF CONTENTS""; ""INTRODUCTION""; ""CHAPTER 1 a€? ON THE APPEARANCE OF SINGULARITIES IN A THREE DIMENSIONAL FLOW""; ""1.1. The functional setting of the Navier-Stokes Equations""; ""1.2. The initial value problem""; ""1.3. The main resul (of Chapter 1)""; ""CHAPTER 2 a€? THE SQUEEZING PROPERTY FOR THE TRAJECTORIES""; ""2.1. Quotient of norms""; ""2.2. The squeezing property""; ""2.3. An application of the squeezing : image of a ball""; ""CHAPTER 3 a€? HAUSDORFF AND FRACTAL DIMENSIONS OF AN ATTRACTOR""; ""3.1. The Hausdorff dimension""; ""3.2. Covering Lemmas""; ""3.3. Proof of Theorem 3.1""""3.4. The fractal dimension""; ""3.5. Lyapunov exponents and Lyapunov numbers""; ""3.6. Application to evolution equations""; ""CHAPTER 4 a€? NUMBER OF DEGREES OF FREEDOM OF A THREE DIMENSIONAL FLOW""; ""4.1. Attractors for three dimensional flows""; ""4.2. Estimate of the fractal dimension of an attractor""; ""4.3. Explicit values of the bound of the dimension""; ""4.3. a. Estimate of the number of degrees of freedom in term of the Kolmogorov dissipation length""; ""4.3.b. Estimate in term of a Reynolds number""; ""4.3.c. Another Reynold number""; ""4.3.d. A Reynold number based on the enstrophy""""4.4. Other aspects of the finite dimensionality of 3-D turbulent flows""; ""4.5.

