

1. Record Nr.	UNINA9910464875403321
Autore	Sogge Christopher D
Titolo	Hangzhou Lectures on Eigenfunctions of the Laplacian (AM-188) [[electronic resource]]
Pubbl/distr/stampa	Princeton, : Princeton University Press, 2014
Descrizione fisica	1 online resource (206 p.)
Collana	Annals of Mathematics Studies
Disciplina	515 515.3533 515/.3533
Soggetti	Eigenfunctions Laplacian operator Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Cover; Title; Copyright; Dedication; Contents; Preface; 1 A review: The Laplacian and the d'Alembertian; 1.1 The Laplacian; 1.2 Fundamental solutions of the d'Alembertian; 2 Geodesics and the Hadamard parametrix; 2.1 Laplace-Beltrami operators; 2.2 Some elliptic regularity estimates; 2.3 Geodesics and normal coordinates-a brief review; 2.4 The Hadamard parametrix; 3 The sharp Weyl formula; 3.1 Eigenfunction expansions; 3.2 Sup-norm estimates for eigenfunctions and spectral clusters; 3.3 Spectral asymptotics: The sharp Weyl formula; 3.4 Sharpness: Spherical harmonics 3.5 Improved results: The torus 3.6 Further improvements: Manifolds with nonpositive curvature; 4 Stationary phase and microlocal analysis; 4.1 The method of stationary phase; 4.2 Pseudodifferential operators; 4.3 Propagation of singularities and Egorov's theorem; 4.4 The Friedrichs quantization; 5 Improved spectral asymptotics and periodic geodesics; 5.1 Periodic geodesics and trace regularity; 5.2 Trace estimates; 5.3 The Duistermaat-Guillemin theorem; 5.4 Geodesic loops and improved sup-norm estimates; 6 Classical and quantum ergodicity; 6.1 Classical ergodicity; 6.2 Quantum ergodicity
Sommario/riassunto	Based on lectures given at Zhejiang University in Hangzhou, China, and

Johns Hopkins University, this book introduces eigenfunctions on Riemannian manifolds. Christopher Sogge gives a proof of the sharp Weyl formula for the distribution of eigenvalues of Laplace-Beltrami operators, as well as an improved version of the Weyl formula, the Duistermaat-Guillemin theorem under natural assumptions on the geodesic flow. Sogge shows that there is quantum ergodicity of eigenfunctions if the geodesic flow is ergodic. Sogge begins with a treatment of the Hadamard parametrix before proving the fi

---