Record Nr. UNINA9910779310203321 Autore Helffer Bernard Titolo Spectral theory and its applications / / Bernard Helffer, Universite Paris-Sud [[electronic resource]] Cambridge:,: Cambridge University Press,, 2013 Pubbl/distr/stampa 1-107-23802-1 **ISBN** 1-107-25498-1 1-139-61121-6 1-139-61307-3 1-139-50572-6 1-139-62609-4 1-139-61679-X 1-283-89949-3 1-139-62237-4 Descrizione fisica 1 online resource (v, 255 pages) : digital, PDF file(s) Collana Cambridge studies in advanced mathematics:: 139 MAT000000 Classificazione Disciplina 515/.7222 Soggetti Spectral theory (Mathematics) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Title from publisher's bibliographic system (viewed on 05 Oct 2015). Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Machine generated contents note: 1. Introduction; 2. Unbounded operators; 3. Representation theorems; 4. Semibounded operators; 5. Compact operators; 6. Spectral theory for bounded operators; 7. Applications in physics and PDE; 8. Spectrum for self-adjoint operators; 9. Essentially self-adjoint operators; 10. Discrete spectrum, essential spectrum; 11. The max-min principle; 12. An application to fluid mechanics; 13. Pseudospectra; 14. Applications for 1D-models; 15. Applications in kinetic theory; 16. Problems; References; Index. Bernard Helffer's graduate-level introduction to the basic tools in Sommario/riassunto spectral analysis is illustrated by numerous examples from the Schrodinger operator theory and various branches of physics: statistical mechanics, superconductivity, fluid mechanics and kinetic theory. The later chapters also introduce non self-adjoint operator theory with an emphasis on the role of the pseudospectra. The author's focus on

applications, along with exercises and examples, enables readers to connect theory with practice so that they develop a good understanding of how the abstract spectral theory can be applied. The final chapter provides various problems that have been the subject of active research in recent years and will challenge the reader's understanding of the material covered.