Record Nr. UNINA9910279755803321 Autore Pollicott Mark Titolo Open Conformal Systems and Perturbations of Transfer Operators / / by Mark Pollicott, Mariusz Urbaski Cham:,: Springer International Publishing:,: Imprint: Springer,, Pubbl/distr/stampa 2017 **ISBN** 3-319-72179-8 Edizione [1st ed. 2017.] Descrizione fisica 1 online resource (XII, 204 p.) Collana Lecture Notes in Mathematics, , 0075-8434; ; 2206 Disciplina 516.35 Soggetti **Dynamics** Ergodic theory Functional analysis Functions of complex variables Operator theory Measure theory Dynamical Systems and Ergodic Theory Functional Analysis Functions of a Complex Variable **Operator Theory** Measure and Integration Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references and index. Nota di contenuto 1. Introduction -- 2. Singular Perturbations of Classical Original Perron-Frobenius Operators on Countable Alphabet Symbol Spaces --3. Symbol Escape Rates and the Survivor Set K(Un) -- 4. Escape Rates for Conformal GDMSs and IFSs -- 5. Applications: Escape Rates for Multimodal Maps and One-Dimensional Complex Dynamics. Sommario/riassunto The focus of this book is on open conformal dynamical systems corresponding to the escape of a point through an open Euclidean ball. The ultimate goal is to understand the asymptotic behavior of the escape rate as the radius of the ball tends to zero. In the case of hyperbolic conformal systems this has been addressed by various

authors. The conformal maps considered in this book are far more

general, and the analysis correspondingly more involved. The asymptotic existence of escape rates is proved and they are calculated in the context of (finite or infinite) countable alphabets, uniformly contracting conformal graph-directed Markov systems, and in particular, conformal countable alphabet iterated function systems. These results have direct applications to interval maps, meromorphic maps and rational functions. Towards this goal the authors develop, on a purely symbolic level, a theory of singular perturbations of Perron-Frobenius (transfer) operators associated with countable alphabet subshifts of finite type and Hölder continuous summable potentials. This leads to a fairly full account of the structure of the corresponding open dynamical systems and their associated surviving sets.