Record Nr. UNINA9910299991703321 Autore Lanford III Oscar E Titolo Fixed Point of the Parabolic Renormalization Operator / / by Oscar E. Lanford III, Michael Yampolsky Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2014 **ISBN** 3-319-11707-6 Edizione [1st ed. 2014.] Descrizione fisica 1 online resource (119 p.) Collana SpringerBriefs in Mathematics, , 2191-8198 Disciplina 510 515.39 515.48 515.9 518 Soggetti **Dynamics** Ergodic theory Functions of complex variables Numerical analysis Dynamical Systems and Ergodic Theory Functions of a Complex Variable **Numerical Analysis** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto 1 Introduction -- 2 Local dynamics of a parabolic germ -- 3 Global theory -- 4 Numerical results -- 5 For dessert: several amusing examples -- Index. Sommario/riassunto This monograph grew out of the authors' efforts to provide a natural geometric description for the class of maps invariant under parabolic renormalization and for the Inou-Shishikura fixed point itself as well as to carry out a computer-assisted study of the parabolic renormalization operator. It introduces a renormalization-invariant class of analytic maps with a maximal domain of analyticity and rigid covering properties and presents a numerical scheme for computing parabolic

renormalization of a germ, which is used to compute the Inou-

Shishikura renormalization fixed point. Inside, readers will find a detailed introduction into the theory of parabolic bifurcation, Fatou coordinates, Écalle-Voronin conjugacy invariants of parabolic germs, and the definition and basic properties of parabolic renormalization. The systematic view of parabolic renormalization developed in the book and the numerical approach to its study will be interesting to both experts in the field as well as graduate students wishing to explore one of the frontiers of modern complex dynamics.