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Nota di contenuto	Contents ; Preface ; 1. Introduction ; 2. Notions and notation ; 2.1 Objects associated with the space X ; 2.2 Objects associated with the space M ; 2.3 Combinatorial objects ; 2.4 Relations between the notions ; 3. Summary ; 3.1 Orbits and grand orbits ; 3.2 Mandelbrot sets 3.2.1 Forest structure and discriminants ; 3.2.2 Relation to resultants ; 3.2.3 Relation to stability domains ; 3.2.4 Critical points and locations of elementary domains ; 3.2.5 Perturbation theory and approximate self-similarity of Mandelbrot set ; 3.2.6 Trails in the forest 3.3 Sheaf of Julia sets over moduli space 4. Fragments of theory ; 4.1 Orbits and reduction theory of iterated maps ; 4.2 Bifurcations and discriminants: from real to complex ; 4.3 Discriminants and resultants for iterated maps ; 4.4 Period-doubling and beyond 4.5 Stability and Mandelbrot set ; 4.6 Towards the theory of Julia sets ; 4.6.1 Grand orbits

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algebraic to ordinary Julia set ; 4.6.3  
Bifurcations of Julia set ; 4.7 On discriminant  
analysis for grand orbits  
4.7.2 Irreducible constituents of discriminants and resultants  
4.7.6 Summary ; 4.7.7 On interpretation of wntk  
; 4.8 Combinatorics of discriminants and resultants  
; 4.9 Shapes of Julia and Mandelbrot sets ;  
4.9.1 Generalities  
4.9.2 Exact statements about 1-parametric families of polynomials of  
power-d

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Sommario/riassunto

This book is devoted to the structure of the Mandelbrot set - a remarkable and important feature of modern theoretical physics, related to chaos and fractals and simultaneously to analytical functions, Riemann surfaces, phase transitions and string theory. The Mandelbrot set is one of the bridges connecting the world of chaos and order. The authors restrict consideration to *discrete* dynamics *of a single variable*. This restriction preserves the most essential properties of the subject, but drastically simplifies computer simulations and the mathematical formalism. The coverage

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