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Titolo	Asymptotic behavior of monodromy : singularly perturbed differential equations on a Riemann surface // Carlos Simpson
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Collana	Lecture Notes in Mathematics, , 0075-8434 ; ; 1502
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Nota di contenuto	Ordinary differential equations on a Riemann surface -- Laplace transform, asymptotic expansions, and the method of stationary phase -- Construction of flows -- Moving relative homology chains -- The main lemma -- Finiteness lemmas -- Sizes of cells -- Moving the cycle of integration -- Bounds on multiplicities -- Regularity of individual terms -- Complements and examples -- The Sturm-Liouville problem.
Sommario/riassunto	This book concerns the question of how the solution of a system of ODE's varies when the differential equation varies. The goal is to give nonzero asymptotic expansions for the solution in terms of a parameter expressing how some coefficients go to infinity. A particular class of families of equations is considered, where the answer exhibits a new kind of behavior not seen in most work known until now. The techniques include Laplace transform and the method of stationary phase, and a combinatorial technique for estimating the contributions of terms in an infinite series expansion for the solution. Addressed primarily to researchers in algebraic geometry, ordinary differential equations and complex analysis, the book will also be of interest to applied mathematicians working on asymptotics of singular perturbations and numerical solution of ODE's.