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Titolo	Viscous Vortical Flows [[electronic resource] /] / by Lu Ting, Rupert Klein
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Collana	Lecture Notes in Physics, , 0075-8450 ; ; 374
Disciplina	530.15
Soggetti	Physics Fluids Numerical analysis Mathematical Methods in Physics Numerical and Computational Physics, Simulation Fluid- and Aerodynamics Numerical Analysis
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Nota di contenuto	Vortex dominated flows and general theory -- Motion and decay of vortex filaments -- Numerical solutions of viscous vortical flows -- Closing remarks.
Sommario/riassunto	This is a comprehensive account of the asymptotic theory of slender vortices with diffusion cores. Addressed to both graduate students and researchers it describes the mathematical model and its numerical analysis. The asymptotic analysis involves two length and two time scales. Consistency conditions and time invariance of moments of vorticity are given and applied to numerical solutions. The authors also describe consistency conditions between the large circumferential and axial velocity in the core.