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Nota di contenuto	Chapter 1 Introduction -- Chapter 2 Basic equations of fluid flow in porous media -- Chapter 3 Some nonlinear problems in classical Darcy seepage flow -- Chapter 4 Several nonlinear problems of low-velocity non-Darcy’s flow in porous media -- Chapter 5 Unconventional reservoir numerical simulations incorporating nonlinear low-velocity non-Darcy’s flow in porous media in field scale.
Sommario/riassunto	This book investigates in detail the mathematical methods and computation methods in efficient solution of some open nonlinear seepage flow problems involved in engineering problems. Developed engineering technologies and some relevant practical field applications

are also provided. The introduced open nonlinear problems include nonlinear quadratic pressure gradient term problem, compressible gas seepage flow problem and low-velocity non-Darcy seepage flow problem. Studies on these nonlinear seepage flow problems have attracted engineers and scientists from various disciplines, such as geo-energy engineering, civil and environmental engineering, fluid mechanics, applied mathematics and computation. In particular, the book systematically establishes a fundamental theory for a strongly nonlinear problem of low-velocity non-Darcy seepage flow from a new perspective of moving boundary, while emphasizing the usage of mathematical linearization transformation methods and computational methods into the analytical and numerical solution of the strongly nonlinear partial differential equations. Sufficient knowledge of mathematics is always introduced ahead of model solution to assist readers. And the procedure of strict formula deduction in the model solution process is provided in detail. High-solution figures and tables from model solution are rich in the book. Therefore, it is very helpful for the readers to master the nonlinear model solution methods and engineering technologies. The book is intended for upper undergraduate students and graduate students who are interested in engineering technology, fluid mechanics and applied mathematics, researchers and engineers working on geo-energy science and engineering and field applications.