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Nota di contenuto	section 1. Introduction to groundwater geochemistry and fundamentals of hydrogeochemical modeling -- Hydrogeochemistry principles for geochemical modeling / J. Bundschuh & O. Sracek -- Thermodynamics of gas and mineral solubility in the unsaturated zone water / L. Mercury & M. Zilberbrand -- Governing equations and solution algorithms for geochemical modeling / C. Ayora, M.W. Saaltink & J. Carrera -- Fluid flow, solute and heat transport equations / M.W. Saaltink, A. Yakirevich, J. Carrera & C. Ayora -- Numerical solutions of reactive transport

equations / M.W. Saaltink, J. Carrera & C. Ayora -- Elaboration of a geochemical model / M. Zilberbrand -- Advances in geochemical modeling for geothermal applications / P. Birkle -- section 2. Case studies -- Integrating field observations and inverse and forward modeling : application at a site with acidic, heavy-metal-contaminated groundwater / P. Glynn & J. Brown -- Models and measurements of porosity and permeability evolution in a sandstone formation / S. Emmanuel, J.J. Ague & O. Walderhaug -- Geochemical modeling of water chemistry evolution in the Guarani Aquifer System in Sao Paulo, Brazil / O. Sracek & R. Hirata -- Modeling of reactive transport at a site contaminated by petroleum hydrocarbons at Hnevice, Czech Republic / O. Sracek & Z. Vencelides -- Numerical modeling for preliminary assessment of natural remediation of phosphorus in variably saturated soil in a peri-urban settlement in Kampala, Uganda / R.N. Kulabako, R. Thunvik, M. Nalubega & A.L. Soutter.

Sommario/riassunto

Geochemical modeling is an important tool in environmental studies, and in the areas of subsurface and surface hydrology, pedology, water resources management, mining geology, geothermal resources, hydrocarbon geology, and related areas dealing with the exploration and extraction of natural resources. The book fills a gap in the literature through its discussion of geochemical modeling, which simulates the chemical and physical processes affecting the distribution of chemical species in liquid, gas, and solid phases. Geochemical modeling applies to a diversity of subsurface en