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Titolo	Fractional operators with constant and variable order with application to geo-hydrology // Abdon Atangana
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ISBN	0-12-809796-5
Descrizione fisica	1 online resource (416 pages) : illustrations (some color), tables
Disciplina	551.49
Soggetti	Groundwater Groundwater flow - Mathematical models Fractional calculus
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Aquifers and their properties -- Principle of groundwater flow -- Groundwater pollution -- Limitations of groundwater models with local derivative -- Fractional operators and their applications -- Regularity of a general parabolic equation with fractional differentiation -- Applications of fractional operators to groundwater models -- Models of groundwater pollution with fractional operators -- Fractional variable order derivatives -- Groundwater flow model in self-similar aquifer with Atangana-Baleanu fractional operators -- Groundwater flow within a fracture, matrix rock and leaky aquifers: fractal geometry -- Modeling groundwater pollution with variable order derivatives -- Groundwater recharge model with fractional differentiation -- Atangana derivative with memory and application.
Sommario/riassunto	Fractional Operators with Constant and Variable Order with Application to Geo-hydrology provides a physical review of fractional operators, fractional variable order operators, and uncertain derivatives to groundwater flow and environmental remediation. It presents a formal set of mathematical equations for the description of groundwater flow and pollution problems using the concept of non-integer order derivative. Both advantages and disadvantages of models with fractional operators are discussed. Based on the author's analyses, the

book proposes new techniques for groundwater remediation, including guidelines on how chemical companies can be positioned in any city to avoid groundwater pollution.
