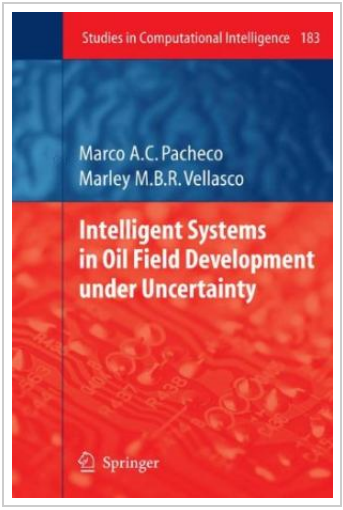




# Intelligent Systems in Oil Field Development Under Uncertainty

By -

Springer. Hardcover. Condition: New. 288 pages. Dimensions: 9.4in. x 6.2in. x 0.9in.The decision to invest in oil field development is an extremely complex problem, even in the absence of uncertainty, due to the great number of technological alternatives that may be used, to the dynamic complexity of oil reservoirs - which involves multiphase flows (oil, gas and water) in porous media with phase change, and to the complicated combinatorial optimization problem of choosing the optimal oil well network, that is, choosing the number and types of wells (horizontal, vertical, directional, multilateral) required for draining oil from a field with a view to maximizing its economic value. The present book is a result of about 4 years of research in this area through a partnership between the Applied Computational Intelligence Laboratory (ICA) of the Department of Electrical Engineering at PUC-Rio, and Petrobras, through its R and D (research and development) program called PRAVAP (Advanced Oil Recovery Program), which is linked to its research center (CENPES). The book makes use of computational intelligence techniques, especially genetic algorithms, genetic programming, neural networks, fuzzy logic and neuro-fuzzy systems for purposes of solving this investment under uncertainty problem. These techniques are combined with modern finance...



### *Reviews*

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