ADVANCED MODELING WITH THE MATLAB RESERVOIR SIMULATION TOOLBOX (MRST)

Many leading experts contribute to this follow-up to *An Introduction to Reservoir Simulation Using MATLAB/GNU Octave: User Guide for the MATLAB Reservoir Simulation Toolbox (MRST).* It introduces more advanced functionality that has been recently added to the open-source MRST software. It is also a self-contained introduction to a variety of modern numerical methods for simulating multiphase flow in porous media. Application examples include geothermal energy, chemical enhanced oil recovery (EOR), geomechanics, flow in fractured and unconventional reservoirs, and unsaturated flow in deformable media. The reader will learn how to implement new models and algorithms in a robust, efficient manner. A large number of numerical examples are included, all fully equipped with code and data so that the reader can reproduce the results and use them as a starting point for their own work. Like the original textbook, this book will prove invaluable for researchers, professionals, and advanced students using reservoir simulation methods.

KNUT-ANDREAS LIE is Chief Scientist at SINTEF in Oslo, Norway. Over the last 20 years he has developed commercial and in-house software solutions for the international petroleum industry. He is a founding father of two pieces of opensource community software (MRST and OPM). He is the author of the textbook *An Introduction to Reservoir Simulation Using MATLAB/GNU Octave: User Guide for the MATLAB Reservoir Simulation Toolbox (MRST).* He has authored 170 scientific papers and supervised 70 MSc/PhD students. Lie is a fellow of the Society for Industrial and Applied Mathematics (SIAM) and an elected member of the Norwegian Academy of Technological Sciences, and recently served as executive editor of *SPE Journal*, a publication of the Society of Petroleum Engineers.

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