

Special Issue

Modeling, Control, and Optimization of Drilling Techniques

Message from the Guest Editors

Drilling is a crucial engineering component of oil and gas development, which is a dynamic complex system with multi-nonlinear couplings, such as wellbore multi-phase flow, drill string mechanics, wellbore stability, and rock breaking drilling. As oil and gas drilling expands into ultra-deep, deepwater, and unconventional areas, this nonlinear system becomes more difficult to characterize. How to model, optimize, and control the drilling process accurately and efficiently is the key to scientific decision making and the construction of drilling. The characterization, analysis, and decision making of drilling processes through classical simulation or emerging artificial intelligence, digital twin, and other technologies are the focus of this Special Issue. This Special Issue aims to promote research on the modeling, control, and optimization of drilling processes, and to promote the development of oil and gas drilling technology.

- intelligence drilling
- parameter optimization
- risk pre-warning
- wellbore multiphase flow
- machine learning
- well control
- energy storage
- multi-objective optimization
- rock breaking, numerical simulation

Guest Editors

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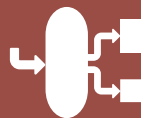
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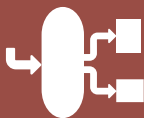


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