

Wednesday, 29 October, 8:30-11:55, Auditorium
[Special Session SE8](#)

Drilling Modelling and Simulation

The process of drilling a borehole is very complex, involving surface and downhole drilling systems, which interact with the drilling fluid and the surrounding rocks. Modeling and simulating every aspect of the drilling process and drilling system is still considered too complex to be realized. However, many areas of modeling and simulation are currently undergoing very aggressive development. Some of them include rig systems, downhole dynamics, rock-bit interaction, drilling/formation fluid, and the Earth model. High-fidelity models in these well-defined areas have demonstrated some success. Lately, drilling modelling and simulation has become one of the key factors for advancing Drilling Systems Automation/Control, intelligent managed pressure drilling and drilling optimization by understanding/predicting downhole dynamics. The topics presented in this session include the current state of drilling process simulation software and simulators, as well as simulator concepts from outside of the oil industry, such as in aerospace and automotive industry, challenges of modelling drilling systems for automation and control, adaptive simulations for downhole drilling systems and an operator's perspective on drilling modeling. This special session brings the modeling and simulation experts in the drilling industry to identify its current state and future goals.

Session Moderators: Junichi Sugiura, Schlumberger and Joachim Oppelt, Baker Hughes

Panelists:



G. P. Ostermeyer
Braunschweig
Technical University



Geoff Downton
Schlumberger



Robello Samuel
Halliburton



Colin James Mason
BP Exploration



John Hedengren
Brigham Young University



Paul E. Pastusek
ExxonMobil Development Co.

