Scientific Computing

Talk - Inverse Analysis and Uncertainty Assessment in Aquifer and Petroleum Reservoir Characterization

For those interested in PDE-based inverse modeling and uncertainty assessment, please be reminded about the guest lecture on Monday Oct. 15 by Dr. Geoff Bohling from Kansas Geological Survey, the University of Kansas.

Inverse Analysis and Uncertainty Assessment in Aquifer andPetroleum Reservoir Characterization

Hydrogeologists and petroleum reservoir engineers are faced with the common problem of predicting the movement of fluids in the subsurface using models representing the largely unknowable distribution of the parameters governing flow and transport. Researchers in both fields are pursuing means to assess and reduce the uncertainty in our representations of flow and transport parameters by integrating information from a number of sources, including static data such as geophysical surveys and well logs and dynamic data such as pressure responses to well tests or well production histories. I will present results of two studies approaching the characterization problem from two different directions, one primarily involving regularized inversion of pressure responses from a set of tomographic pumping tests in a shallow alluvial aquifer, including ongoing work on a flexible approach for incorporating geophysical data into the inversion, and the other involving assessment of uncertainty in gas volume computations in a geostatistical (stochastic) model of a giant gas field. I will conclude with a brief overview of a few approaches to the fusion of static and dynamic data currently under investigation by different researchers.

What	
When	Oct 15, 2007 from 01:15 PM to 02:00 PM
Where	Bakrommet at Simula
Contact Name	Xing Cai
Add event to calendar	vCal iCal