Abstract

Hydrogeologists construct detailed numerical models to predict the responses of hydrologic systems to natural and applied stresses. These predictions form the basis for decisions that must balance optimal use of resources and ecosystem support. The decisions typically involve multiple interested parties with strongly differing priorities for water allocation. This requires improved methods to identify the optimal set of observations to collect and to use model-predictions to support robust decision-making under considerable uncertainty.

Dr. Ferré will present recent developments in optimal design of hydrogeologic monitoring networks and discuss how hydrogeologic models can be used for decision support under uncertainty. Finally, he will show that focusing hydrologic analysis on specific, practical problems of interest can guide optimal measurement selection, advance hydrologic science, and improve the integration of science into economic and policy decisions.