Pacific Northwest National Laboratory

The Frontiers in Computational and Information Sciences Seminar Series presents

Modeling of physical systems underspecified by data

Speaker: Professor Daniel Tartakovsky

Department of Mechanical and Aerospace Engineering

University of California – San Diego

- Date: Friday, September 10th
- Time: 1:30 – 2:30 pm
- Location: ETB Columbia River Room (1103)
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Although it has long been recognized that simulations of most physical systems are fundamentally stochastic, this fact remains overlooked in most practical applications. Even essentially deterministic systems must be treated stochastically when their parameters, boundary and initial conditions, or forcing functions are under-specified by data. Data-driven random domain decompositions provide a novel approach to dealing with the kinds of spatially heterogeneous random processes that typically appear in realistic simulations of physical systems. The method is based on a doubly stochastic model in which the problem domain is decomposed according to stochastic geometries into disjoint random fields.

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