

# Improving Accuracy of Subsurface Flow and Transport Models

Contact: Alex Tartakovsky, [Alexandre.Tartakovsky@pnnl.gov](mailto:Alexandre.Tartakovsky@pnnl.gov), 509-372-6185, Pacific Northwest National Laboratory

## Objective

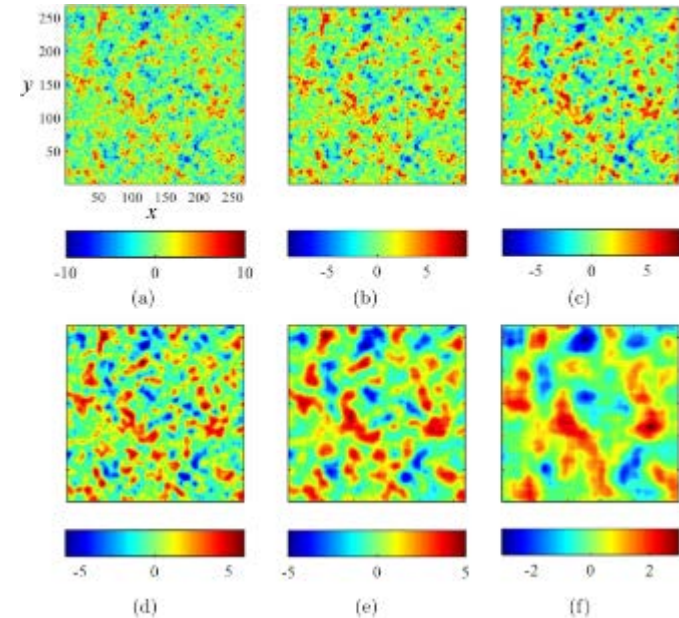
- To improve the predictive capabilities of subsurface flow models.

## New Science

- Developed new equations that account for length scales at which predictions are made and hydrological measurements are collected.

## Significance

- The new calculation method allows researchers to identify a scale at which predictions can be made with an acceptable (as defined by the researcher) level of uncertainty.
- Armed with these predictive models that account for uncertainty, land stewards and researchers can take appropriate actions to isolate and remove contaminants.
- Represents an increase in computational efficiency over existing models.



Natural logarithm of hydraulic conductivity as a function of the observation scale. Figures (a), (b)...(f) corresponds to the observation scales  $n$ ,  $2n$ , ...  $6n$ , respectively.