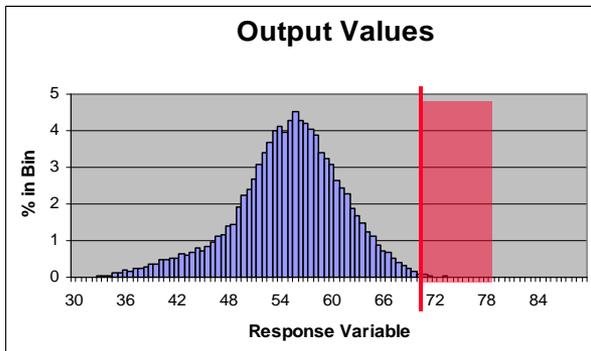


Toolkit for Large-Scale Optimization & UQ



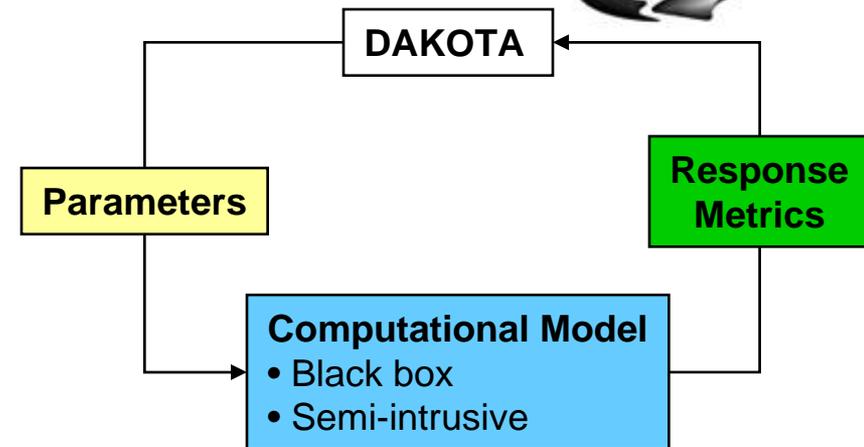
DAKOTA allows analysis of fundamental science and engineering questions with computational models:

- **Sensitivities:** What are the crucial parameters?
- **Uncertainties:** How safe, reliable, robust, variable is my system?
- **Optimization:** What is the best performing design?
- **Calibration:** What parameter values or models best match experimental data?



Example: Assessing probability of failure from distribution (uncertainty) of output values

**Broad deployment via open source model:
Over 4,000 download registrations spanning
government, industry, academia**



DAKOTA analysis “strategies” rely on iterative analysis with a computational model for the phenomenon of interest

Strategies can be combined for more advanced capabilities, e.g.,

- *Model calibration under uncertainty*
- *Uncertainty of optima*

Multi-level parallelism supports large-scale applications and architectures