

**Evaluation of Models
Department of Energy**

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ABSTRACT

Methodologies for evaluating models include

- peer review
- test and analyze solutions against known solutions
- conduct tracer field experiments
- conduct operational systems tests in the operational environment.

When testing analytic solutions one must ensure the right equations are being used (i.e., is the science valid) and that they are being solved correctly in three dimensions (i.e., have they been encoded correctly). Tracer field experiments test the validity of models in the real world with the added consideration that the multiple scales must be modeled. The evaluator can use graphical and statistical measurements of model performance.

Examples of tracer field experiments that have been conducted are:

- Project Prairie Grass
- Savannah River
- Diablo Canyon tracer study (complex terrain)
- ETEX (European tracer experiment)
- VTMX/URBAN

DOE and DOD are planning an urban field experiment in 2003 for Oklahoma City, OK.