

## STANMOD Software Review

**Craig E. Divine** – International Ground Water Modeling Center

STANMOD (STudio of ANalytical MODels) is a suite of porous media solute transport models created by the U.S. Salinity Laboratory incorporating some of their more popular, previously-developed models in a common, user-friendly pre- and post-processor. Specifically, STANMOD 2.0 includes CHAIN, CFITM, CFITM, CXTFIT, 3DADE and N3DADE.

These models are based on analytical solutions of the convection-dispersion equation and consider a variety of complex solute transport processes, including sequential first-order decay and chemical/physical non-equilibrium (rate-limited) processes. Field-scale solute transport can be evaluated using simplified stochastic methods. Several of the codes include inverse algorithms for estimation of optimal transport parameter values by fitting models to observed data. Because they are based on analytical solutions, STANMOD codes assume homogeneous medium properties and steady boundary conditions. Consequently, accuracy of the models is related to the degree to which actual conditions deviate from these and other model assumptions.

While there are no modifications of the previously-released versions of the underlying transport models, STANMOD greatly increases utility of these models by providing a straightforward pre-processor and useful post-processor/plotting options. The technical documentation (which includes online help) for the STANMOD interface is brief; however, the Windows-based interface is intuitive and numerous example problems are provided. Electronic copies of the original documentation for the transport models are included

and the developers at the U.S. Salinity Laboratory can be contacted for technical assistance.

A demo version of STANMOD and its individual underlying transport models is available free of charge at

[www.ussl.arc.usda.gov](http://www.ussl.arc.usda.gov). The most recent version of STANMOD (version 2.0) can be purchased for \$500 through the International Ground Water Modeling Center ([www.mines.edu/igwmc/](http://www.mines.edu/igwmc/)).

**SOFTWARE REVIEW**

**STANMOD**

IGWMC International Ground Water Modeling Center  
 Department of Ecology and Geology Engineering

Reviewer: Craig E. Divine

**Rock Hammer Rating System**

- ★★★★★ Excellent
- ★★★★ Very Good
- ★★★ Good
- ★★ Satisfactory
- ★ Poor

**Studio of ANalytical MODels**

Developed by International Ground Water Modeling Center

Ease Of Use:	★★★★
Application:	Solute Transport in Porous Media
Documentation:	★★
Speed:	★★★★
GUI:	★★★★
Output/Plotting:	★★★★
Best Feature:	Step-by-step pre-processor
Worst Feature:	Limited documentation
<b>Overall Rating:</b>	★★★★

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