

# PLEASE READ THIS DOCUMENT

## Installation Instructions

*If you have downloaded PEST*

To install PEST, create a new directory (eg. `c:\pest`) and unzip the contents of *pest11.zip* into that directory. Next add the PEST directory to the `PATH` environment variable.

*If you have received the PEST CD*

Create a new directory (eg. `c:\pest`) on your hard disk and copy all files from the *pest* directory and subdirectories of the CD to your hard disk. Next add the PEST directory to the `PATH` environment variable.

## Documentation

The PEST manual is supplied in pdf format as file *pestman.pdf*. It is situated in the *doc* subdirectory after installation. Additions to PEST functionality since upgrading of the manual are documented in *addendum.pdf*. It is very important that you print this out and keep it with the manual. (I apologise that this is so large; PEST documentation will be completely rewritten shortly.)

*modules.pdf* describes FORTRAN 90 modules which are supplied with PEST (see the *modules* subdirectory). Programmers can employ these modules for management of communications between their applications and model input files where model runs are undertaken in both serial and parallel modes. Communication between an application and the model with which it communicates is implemented using the same template and instruction file concepts that PEST uses.

## Other Software

A number of programs have been written to expedite PEST usage in common modelling situations. These include:

- the PEST Groundwater Data Utilities,
- the PEST Surface Water Utilities, and
- MODFLOW-ASP

Programs of the Groundwater Data Utilities and Surface Water Utilities can provide great assistance in file preparation for a PEST run by automating most of the tasks involved in this process.

Included in the Groundwater Data Utilities are a number of programs which can be used to parameterise a MODFLOW model using pilot points and geostatistically-based random fields, and to introduce geostatistically-based (and other) regularisation constraints into the parameterisation process. When used in conjunction with the regularisation functionality of PEST, this software is more powerful by far than any other groundwater parameterisation software available today.

The MODFLOW-ASP suite (developed to enhance the conjunctive use of PEST with MODFLOW) includes a MODFLOW2000-to-PEST translator which translates a MODFLOW-2000 input dataset, such as that produced by your favourite graphical user interface, to PEST format. It also includes a version of MODFLOW2000 that exchanges sensitivity information directly with PEST for extremely efficient MODFLOW2000 calibration using PEST. Why should you use PEST with MODFLOW2000 instead of the parameter estimation functionality already supplied with MODFLOW2000? Read the documentation and find out.

The Surface Water Utilities include a comprehensive time series processor named TSPROC which is an extremely powerful aid to surface water model calibration. Using TSPROC, calibration can be undertaken based on one or more observed time series, as well as on important attributes of these time series such as volumes accumulated over various times, certain flow statistics and flow exceedence fractions. Functionality is included for automatic construction of PEST input files even for complex parameterisation problems.

To download this software, see the following web pages:-

<http://www.sspa.com/pest>