FOURPT

Model Uses FOURPT simulates unsteady one-dimensional flow in open channel networks and can be used for simulation complex and meandering networks and hydraulic structures.

Major Categories Hydrology and Water Use; Geomorphology

Subject Knowledge Level
Intermediate

Minor Categories Channel Modification; Flow

Technical Difficulty Level
Intermediate

Model Type Physical Model

Geographic in Nature?
No

Abstract
FOURPT is a numerical model for simulating unsteady, one-dimensional flow in networks of open channels. Options particularly useful in training or prototyping include selection of governing equations (kinematic, diffusion, or dynamic), boundary-value perturbation, and user-programmable constraint equations. The model can simulate non-trivial concepts, such as flow in complex interconnected channel networks, meandering channels with variable effective flow lengths, hydraulic structures defined by unique three-parameter relations, and density-driven flow. Channel geometry may be rectangular, trapezoidal, or irregular depending upon which of three channel-property modules is linked with the program.

Future Developments
Unknown

Model Limitations
Unknown

Model Features

- Equation type selection (kinematic, diffusion, dynamic)
- User-programmable constraint equations
- Supports rectangular, trapezoidal and irregular shaped channel geometry

Required Data Types
Input data are grouped according to type, program control, channel properties, network schematic, initial values, boundary values, and constraint parameters. The first three types are necessary for any model execution, and the remainder are optional, either not required or approximated by the model.

Model Outputs
Level of detail included in the model execution log is user defined. Time series and space series of computed water-surface elevations and flow at locations and times selected by the user are available in separate tab-delimited text files.

Source
US Geological Survey

Source (URL)
http://water.usgs.gov/software/FourPt.html

Hardware Requirements
386 or later with Math-CoProcessor
At least 4mb RAM

Supported Platforms

DOS	☒	**UNIX**	☒
Windows	☐	**Macintosh**	☐

Software Requirements
None noted.

Cost, Licensing and Availability
Free, available from the link above.