

Release of CommonMP Ver. 1.3

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1. Introduction

Since April 2007, the River Department has been developing a platform of a PC analysis model that simulates complicated hydraulic and hydrologic phenomena in river basins by connecting multiple hydraulic and hydrologic analysis models (river channel models, outflow models, etc., collectively "element models"). We released this platform (CommonMP: Common Modeling Platform for water-material circulation analysis) on the website ¹⁾ in March 2010, revising the version every year. This paper reports on Ver. 1.3, released in November 2013.

2. New functions of CommonMP Ver. 1.3

CommonMP Ver. 1.0 was capable of implementing a single simulation project (a set of conditions for simulation data, connection of element models to be used, etc.) and displaying analysis results as simple graphs. In Ver. 1.1, a function for distributing simulation projects to different computers was added. In Ver. 1.2, support for implementing multiple simulation projects concurrently was added, which enabled calculations for real-time flood prediction by the joint use of a tool for obtaining real-time hydrologic data.

Ver. 1.3 adds a river channel combination model that combines river channels and adjusts branch flow rate, etc., and a levee break / overtopping model (Figure) that adjusts water passing between a river channel and protected lowland by combining the river channel model and the flood model. Consequently, simulation that integrates branch river channels or a river channel and flooding has become available.

In addition, Ver. 1.3 disclosed the development specifications of the software (extension tool) that mainly displays analysis results on CommonMP, and set forth a procedure for installing the extension tool in CommonMP and a sharing it so that persons other than CommonMP developers may develop and distribute the extension tool as well as element models.

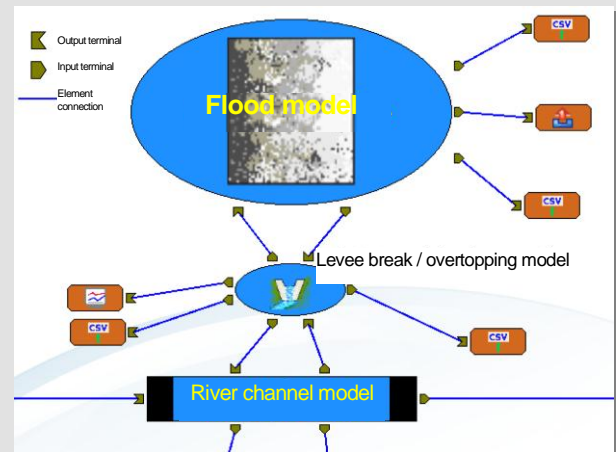


Figure: Example for Using Levee Break / Overtopping Model that Combines Flood Model and River Channel Model in CommonMP

3. Future activities

With the release of Ver. 1.3, hydraulic and hydrologic analyses including branch channel and flood analyses have become available in CommonMP. In the future, we plan to develop a practical flood analysis model, and extension tools that support the export of analysis results from CommonMP to reports, etc. in order to build an environment for using CommonMP in daily operations.

Extension tools will be included in a library on the CommonMP website in the same way as the Element Model Library ²⁾, released in March 2012, so that any user may use them.

[Reference]

1) CommonMP website: <http://framework.nilim.go.jp>

2) Element model library:

<http://framework.nilim.go.jp/lib-model/index.html>