

iMOD: A high performance open source framework for SEAWAT

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ABSTRACT

At Deltares, a high performance open source framework for groundwater modeling is being developed, called iMOD. iMOD has originally been developed for high resolution groundwater modeling with MODFLOW, focusing on performance and user-friendliness. Since last year, SEAWAT has been successfully modified for iMOD. This means that the SEAWAT in- and output routines have been modified to incorporate fast binary read, where the code internally clips and scales (up- or down) the input data to the resolution and extent of the computational domain (subdomain). In that way the user can work from one expandable data set covering all possible future areas of interest, and easily generate consistent subdomain models. The iMOD graphical user interface is used to visualize and edit all the large datasets in a fast way. It incorporates a wide range of easy-to-use tools for visualization (e.g. 2D cross sections, 3D, time series) and model building (e.g. a 3D subsurface tool). For running SEAWAT, the code has been modified to read a driver input file. This file is key-word driven and enables the user to set up a model in a flexible and user friendly way. The iMOD version of SEAWAT is currently being used in projects in The Netherlands, Singapore and Bangladesh.