



Modflow-2005, the U.S. Geological Survey Modular Ground-Water Model - Documentation of Shared Node Local Grid Refinement (Lgr) and the Boundary Flow and Head (Bfh) Package

By -

Bibliogov, United States, 2012. Paperback. Book Condition: New. 241 x 185 mm. Language: English . Brand New Book ***** Print on Demand *****.This report documents the addition of shared node Local Grid Refinement (LGR) to MODFLOW-2005, the U.S. Geological Survey modular, transient, three-dimensional, finite-difference ground-water flow model. LGR provides the capability to simulate ground-water flow using one block-shaped higher-resolution local grid (a child model) within a coarser-grid parent model. LGR accomplishes this by iteratively coupling two separate MODFLOW-2005 models such that heads and fluxes are balanced across the shared interfacing boundary. LGR can be used in two-and three-dimensional, steady-state and transient simulations and for simulations of confined and unconfined ground-water systems. Traditional one-way coupled telescopic mesh refinement (TMR) methods can have large, often undetected, inconsistencies in heads and fluxes across the interface between two model grids. The iteratively coupled shared-node method of LGR provides a more rigorous coupling in which the solution accuracy is controlled by convergence criteria defined by the user. In realistic problems, this can result in substantially more accurate solutions and require an increase in computer processing time. The rigorous coupling enables sensitivity analysis, parameter estimation, and uncertainty

Reviews

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