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## GsfLOW?coupled Ground-Water and Surface-Water Flow Model Based on the Integration of the Precipitation-Runoff Modeling System (Prms) and the Modular Ground-Water Flow Model (Modflow-2005) (Paperback)

By Steven L Markstrom, Richard G Niswonger, R Steven Regan

Createspace, United States, 2014. Paperback. Book Condition: New. 279 x 216 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.The need to assess the effects of variability in climate, biota, geology, and human activities on water availability and flow requires the development of models that couple two or more components of the hydrologic cycle. An integrated hydrologic model called GSFLOW (Ground-water and Surface-water FLOW) was developed to simulate coupled ground-water and surface-water resources. The new model is based on the integration of the U.S. Geological Survey Precipitation-Runoff Modeling System (PRMS) and the U.S. Geological Survey Modular Ground-Water Flow Model (MODFLOW). Additional model components were developed, and existing components were modified, to facilitate integration of the models. Methods were developed to route flow among the PRMS Hydrologic Response Units (HRUs) and between the HRUs and the MODFLOW finite-difference cells. This report describes the organization, concepts, design, and mathematical formulation of all GSFLOW model components. An important aspect of the integrated model design is its ability to conserve water mass and to provide comprehensive water budgets for a location of interest. This report includes descriptions of how water budgets are calculated for the

### Reviews

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