



The integrated surface-ground water modeling in Hancheon catchment in the Jeju island, South Korea

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In the Jeju Island (Republic of Korea), surface runoff characteristics are very different from those of the inland. In Jeju island, runoff has frequently happened when the rainfall depth is over a threshold value. To simulate these characteristics, general rainfall-runoff model structure has to be modified. In this study, the integrated SWAT-MODFLOW model was applied for the comprehensive investigation of the hydrologic components of the Hancheon catchment in the Jeju Island. The SWAT-MODFLOW model is able to simulate the complex runoff structure including stream-aquifer interaction, spatial-temporal groundwater recharge and so on. The results show that the amount of groundwater discharge to stream is very small, but it might be added to the discharge into the sea. This integrated model can produce a reasonable water budget especially accurate estimation of groundwater recharge.