

عنوان مقاله:

Addressing Identifiability and Equifinality in Calibration of a Distributed Rainfall-Runoff Model Using Genetic Algorithms

محل انتشار:

هشتمین کنگره بین المللی مهندسی عمران (سال: 1388)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Mahyar Shafii - Dept. of Hydrology and Hydraulics, Vrije Universiteit Brussel, Brussels, BELGIUM

Florimond De Smedt - Dept. of Hydrology and Hydraulics, Vrije Universiteit Brussel, Brussels, BELGIUM

خلاصه مقاله:

Conceptual rainfall-runoff models have been widely applied in hydrological modeling, while their parameters are estimated through calibration against observed data. The purpose of identifiability analysis in calibration is the identification of the model structure and a corresponding parameter set that are most representative of the catchment under investigation. A genetic algorithm is applied to calibrate rainfallrunoff process in WetSpa model. Identifiability of the model parameters is investigated through comparison between different parameter sets obtained through 10 different runs (populations) and also along a single run, employing equifinality concept. Variability of optimum parameter sets within different obtained best solutions serves as a measure to assess parameters identifiability. The obtained results revealed appropriate model efficiency to simulate streamflows in the case study. Moreover, based on the identifiability results, it was concluded that some of model parameters are better definable than others. More advanced approaches for calibration such as multi-population search methods may serve to improve identifiability of the parameters.

کلمات کلیدی:

.Rainfall-runoff, Genetic Algorithm, Optimization, Identifiability, Equifinality

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/62540>

