عنوان مقاله:

Using Simulated Annealing (SA), Evolutionary Algorithm To Determine Optimal Dimensions of Clay Core in Earth Dams

نویسندگان:

Marzieh Mohammadi - *Department of Water Engineering, Shahid Bahonar University, P.O.BOX 76169133, Kerman,Iran,*

Gholam-Abass Barani - *Professor, Department of Civil Engineering, Shahid Bahonar University, Kerman, Iran,*

Kourosh Qaderi - *Assist Professor, Department of Water Engineering, Shahid Bahonar University, Kerman, Iran.*

خلاصه مقاله:

Earth dam is a structure as homogeneous or non-homogeneous forms for raising water level or water supply. Earth dam consist of different parts that one of the main parts is clay core. Choosing an optimal non permeable core which causes reduction of seepage through dam body and also being stable is necessary. The objective of this research is to optimize the geometry of earth dam clay core such that, beside of reduction of seepage through dam body, the volume ofcore material is minimized. For access of this objective a consolidated model consist of a simple model which obtained by linear regression and SA algorithm were used, to optimize the Birjand Hesar Sangi dam. Optimal parameters such as seepage through dam body, hydraulic gradient andsafety factor of stability access from model compared by the values access from the direct run of the software modeling that show a good agreement. Also the result of access by modeling have been compared by actual dimensions of Birjand Hesar Sangi dam, that cause reduction ofmaterial volume for construction core dam and shell dam about 21 and 8 percent, respectively. Result show that the consolidated model has successful operations and a general optimal plan design of clay core dimensions in stable condition can be achieved.

کلمات کلیدی:

Simulated Annealing Algorithm (SA), optimization, earth dam, seepage, clay core

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