

## عنوان مقاله:

Evaluating a Novel Approach of Finite Volume Method for Discretization of Seepage Equation in Embankment Dams

## محل انتشار:

چهارمین کنگره بین المللی عمران ، معماری و توسعه شهری (سال: 1395)

تعداد صفحات اصل مقاله: 16

## نویسندگان:

Kamyar Mirabi - *Department of Civil Engineering, Islamic Azad University, Central Tehran Branch, Tehran, Iran*

Hamid Reza Vosoughifar - *Department of Civil Engineering, Islamic Azad University, South Tehran Branch, Tehran, Iran*

Armin Jalalzadeh - *Department of Civil Engineering, Islamic Azad University, Ardabil Branch, Ardabil, Iran*

## خلاصه مقاله:

This paper was concerned to simulate seepage phenomena (problems) via a novel approach. A high-resolution finite volume method (FVM) was employed to solve the two-dimensional (2D) seepage equations (SEs) using an unstructured grids. Voronoi mesh generation method has been exploited for grid generation method due to its special advantages. In this attempt, to reach to a proper accuracy, solving method obtained on even-odd steps was applied. The model named V-Seep (with MATLAB software) was run under different seepage conditions and then verified by comparing the model outputs with results obtained from different models and measured seepage. The Phase2-2D and Seep-W software which are based on FEM and a code based on FVM with triangular grids. Due to a precise agreement between those output and other software results, the V-Seep could be considered as a reliable method for dealing with seepage problems, especially in embankment dams. In addition, statistical observations indicated a good conformity between the V-Seep and measured data from a case study.

## کلمات کلیدی:

Seepage, Embankment dam, Finite volume method, unstructured mesh, Voronoi grids

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/618401>

