

عنوان مقاله:

Dam-break flow regime over mobile beds, a numerical CFD approach

محل انتشار:

یازدهمین کنفرانس بین المللی توسعه پایدار و عمران شهری (سال: 1400)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Alireza Khoshkonesh - *Ph.D. in hydraulics, water structures, department of water engineering, Bu-Ali Sina university, (Hamedan ۶۵۱۷۸, (Islamic republic of Iran*

Fariba Ahmadi Dehrashid - *Ph.D. student in hydraulics, water structures, department of water engineering, Bu-Ali Sina university, Hamedan ۶۵۱۷۸, (Islamic republic of Iran)Email: faribaahmadi۹۱@gmail.com*

Blaise NSOM - *Université de Bretagne Occidentale. IRDL/UBO UMR CNRS ۶۰۲۷. Rue de Kergoat, ۲۹۲۸۵ Brest, France*

Saeed Gohari - *Assistant professor of hydraulics structures, Department of Water Engineering, Faculty of Agri-culture, (Bu-Ali Sina University, Hamedan, ۶۵۱۷۸, (Islamic republic of Iran*

Hossein Banejad - *Associate professor of hydraulics, department of water engineering, college of agriculture, Ferdowsi university of Mashhad, Mashhad, ۹۱۷۳۵ (Islamic republic of Iran*

Payam Heidarian - *MSc in water and hydraulic structures engineering, Department of hydraulic structures, Faculty of civil and environment engineering, Tarbiat Modares University, Iran*

خلاصه مقاله:

In this paper, the effect of the sediment bed elevation on dam-break flow over mobile beds is scrutinized using the volume of fluid (VOF) method. While the equations of motion are tackled employing the finite-volume, standard k-ε closure model and the van Rijn bed load formula. The results show that an increase in the downstream bed elevation leads to reducing: a) the flow advancing distance and water rising over the end wall, b) the sediment transport rate downstream and c) the reservoir releasing rate. Further, the decrease in level-difference results in in-creasing the sheet-flow height. However, it does not affect the critical specific downstream of the dam. It causes the formation and evolution of two hydraulic jumps and scour holes in the near field and the downstream channel. The dimen-sions of the first scour hole are larger than the second one

کلمات کلیدی:

.Dam-break, Bed elevation, RANS, Mobile-bed, VOF

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