



An assessment of a two-dimensional numerical model of unsteady flow around a box culvert

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ABSTRACT

This paper deals with a numerical model to simulate flow through a box culvert, under highways in Oman during flash floods. We firstly show the typical flow patterns with the transition from free surface flows to pressurized flows and overflows over a culvert, based on hydraulic experiments. Then, a numerical model applicable to the full/partial full pressurized flows is tested to simulate the typical flow patterns under the conditions of experiments. It is pointed out that the numerical model used here can simulate the simple flow patterns with the transition from open channel free surface flow to pressurized flow to some extents, although the model should be improved further to get better results on the from transition.

KEYWORDS

Box culvert, flash flood, open channel flow, pressurized flow