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Time variation of scour at downstream pier for two piers in tandem arrangement

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ABSTRACT

A semi-empirical model is presented to estimate the time variation of scour depth at downstream of pier when two piers are arranged in tandem arrangement under clear water scour condition with uniform sediments. The methodology developed for computing the time variation of scour depth is based on the concept of the conservation of mass of sediment, considering the primary horseshoe vortex system to be the main agent of scouring and assuming a layer-by-layer scouring process. The proposed model agrees closely with the reported experimental data of time variation of scour depth at downstream piers in tandem pier arrangements under clear water condition with uniform sediments.