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A note on the uncertainty in tsunami shape for estimation of its run-up heights

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In practice, when tsunami approaches the coast and the time for decision making and issuing warning alert is limited, design formulas for fast estimation of tsunami run-up characteristics are applied. The most famous and the most used among them assume that incoming wave has a solitonic shape. However the exact shape of the incoming wave is usually unknown. This is why it is important to know the error caused by the wave shape uncertainty. In this paper we discuss how the uncertainty of the incoming wave shape influences its run-up characteristics in different bays. Two typical beach geometries: plane beach and U-shaped bay are considered.