Multiphase Flow Simulations of Impulse Waves Generated by Subaerial Granular Landslides

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Abstract

Sub-aerial granular landslides falling into lakes, reservoirs, or bays can generate larger impulse waves and cause adverse impacts on human lives in affected areas. The processes of granular landslides and impulse-wave generation are multiphase phenomena in nature, involving air, water and sediment. In this talk, a multiphase flow model to investigate such processes will be introduced and the effects of an erodible bed and grain size will be examined through numerical examples. Applications of the multiphase flow model to wave-