



Bank erosion processes on Lower Mekong River

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Bank erosion processes are modelled by employing fully coupled fluvial erosion and mass-wasting models to identify the key controls on bank retreat at several study sites, and across a wide range of flows on a globally significant monsoonal river, the Mekong. With respect to mass-wasting processes, a limit equilibrium bank stability analysis, combined with a finite element seepage analysis, are simulated to assess the influence of rainfall intensity and flow hydrograph characteristics on bank pore water pressure distributions. To archive fluvial erosion, the boundary shear stress exerted on the river banks is accurately parameterised by accounting for the influence of form roughness imparted by natural topographic features (slumps, embayments, etc) that are characteristic of the Mekong's river banks. Year flow hydrographs are selected through the analysis of hydrograph characteristics such as shape of hydrograph, rate of rise, rate of fall... Results are used to evaluate bank erosion across a range of flow discharges, with annual rates determined by integration across the Mekong's highly predictable monsoonal regime.