IN SITU FLUME MEASUREMENTS OF SEDIMENT ERODABILITY IN SAGUENAY FJORD (QUEBEC, CANADA)

Moreau, A.-L., Locat, J., Department of Geology and Geological Engineering, Laval University, Quebec, Canada
Philip Hill, Natural Resources Canada, Geological Survey of Canada, Sidney, B.C., Canada
Bernard Long, INRS-ETE, Québec, Canada
and Yvon Ouellet, Department of Civil Engineering, Laval University, Quebec, Canada

REFERENCE
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ABSTRACT
The erodability of surficial sediment in Saguenay Fjord, Quebec, was investigated over a three-year period at fourteen sites in Baie des Ha! Ha! and the North Arm using a benthic flume, Miniflume. Previous studies showed that Saguenay Fjord sediment characteristics vary greatly on small and large scales. The critical shear stress (τ_c) reflect this variability, with τ_c between 0.07 and 0.48 Pa. The measured critical shear stress and erosion rates were consistent with those of other in situ studies in other area. The variability in the results is linked to the great spatial variability of benthic sediments rather than to temporal variability. Some of the results were integrated in the Parchure and Mehta (1985) erosion law since the upper portion of the active sediment layer is typically a stratified bed. The identification of erosion parameters (critical shear stress, erosion rate, parameters α and Ef in erosion law) and their high variability is the first step in defining the erosion susceptibility hazard in Saguenay Fjord.

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