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River Bank Erosion Studies: A Review on Investigation Approaches and Governing Factors

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Abstract : This paper provides detail review on river bank erosion studies with respect to their processes, methods of measurements and factors governing river bank erosion. Bank erosion processes are commonly associated with river changes initiation and development, through width adjustment and planform evolution. It consists of two main types of erosion processes; basal erosion due to fluvial hydraulic force and bank failure under the influence of gravity. Most studies had only focused on one factor rather than integrating both factors. Evidences of previous works have shown integration between both processes of fluvial hydraulic force and bank failure. Bank failure is often treated as probabilistic phenomenon without having physical characteristics and the geotechnical aspects of the bank. This review summarizes the findings of previous investigators with respect to measurement techniques and prediction rates of river bank erosion through field investigation, physical model and numerical model approaches. Factors governing river bank erosion considering physical characteristics of fluvial erosion are defined.

Keywords : river bank erosion, bank erosion, dimensional analysis, geotechnical aspects
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