Suspended sediments on the onset of river bars

ABSTRACT

Suspended load transport on onset of Alternate River Bars River flow provides a fascinating phenomenon where an interaction between fluid and its container determines the shape of the latter, the cause being non-cohesive character of the river bed. Similarly, the flow-bottom interactions are interesting and in straight channels, these may occur on a mega scale (of the order of channel width) which gives rise to the development of bars. The process can be explained in terms of the underlying instability mechanism i.e. when a flat erodible bed subject to a turbulent flow, loses its stability as a result of the bed load transport of sediment. The bar instability is the slow geological process that intimately affects the geography of the ecosystem. The phenomenon of formation of bars, is modelled as a two dimensional flow in a straight alluvial rectangular channel with an initially plane erodible sediment bed. The heterogeneity and non-uniformity of the sediments would be taken into consideration. The underlying dynamical system would be dealt with the usage of intelligent system approach and Mathematical approach.