

3rd International Conference on Hydrology & Meteorology

September 15-16, 2014 Hyderabad International Convention Centre, India

Interaction between the river and its floodplain

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The perennial supply of good quantity and quality of water along with a host of other benefits such as fertile and plain landmasses constituting the floodplains suitable for growth of crops and fodder, water connectivity to major cities both intra state and interstate etc. have made the rivers very attractive destination for dense population to settle on their floodplains. However during flood times ironically the same rivers are also guilty of destruction of the very life they seem to sustain. These compound channels are extremely complex from analysis point of view due to the presence of a number of geometrical and physical parameters and hence have attracted the attention of researchers in last half century. Geometrically the main river section is often narrow and deep whereas the floodplains are wide and shallow associated with considerable exchange of momentum between the main channel and floodplain. From practical point of view engineers are often entrusted not only with the task of accurate prediction of stage discharge curve but also finding distribution of velocity and boundary shear stress across the whole compound section for a number of floodplain design measures. It is nearly impossible to get the data in field condition during flood times in rivers. So laboratory data and validation to river data has become the most challenging tasks to researchers. Many theoretical, mathematical, and numerical models have been investigated by different investigators to predict these flow variables of river interacting with floodplain.

Biography

Kishanjit Kumar Khatua completed his PhD on 2007 from National Institute of Technology, Rourkela and has many Pre and Postdoctoral research experiences with many foreign universities such as University of South Carolina USA, University of Leeds UK, University of Nottingham and University of Birmingham, UK. He has more than 20 years of teaching, administrative and research experience. He has published more than 100 papers in reputed journals and International conferences and has been serving as Reviewers and editorial board member in different International and national journals of repute. He has completed and completing many national and international R&D projects as the main project leaders. He has received many awards in research and development.

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Seismicity in Aswan reservoir area and its relation to the fluctuation of the reservoir water level and the underground water

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Aswan reservoir (Lake Nasser) is the second largest man-made reservoir in the world. Filling of the reservoir started in 1964. No instrumental earthquakes are known in the area before the reservoir impoundment. In 1981, an earthquake with magnitude 5.3 MD occurred in the northern part of the reservoir. Due to the closeness of that event from the High Dam, many detailed seismic studies were carried out and still going on such as the relation between the fluctuation of the reservoir water level as well as the role played by the pore pressure of the underground water and the seismic activity in the area.

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