

Seminario

Improving predictability of changes in tide-influenced channel morphology – can we take previously established concepts one step further?

Martedì, 10 maggio – ore 16:30 Aula Arduino

Relatore: **Dr. Anna van Yperen**

University of Oslo - Department of Geosciences



An increasing number of studies links down-dip changes in riverine morphodynamics on delta plains to backwater effects, i.e. flow deceleration as a river approaches a standing water body and subsequent deposition. A potential predictability exists on backwater-mediated trends in changing river channel width, depth, sinuosity, and grain size, which in turn controls resulting sedimentary architecture and distribution of heterogeneities. However, backwater concepts originated and are predominantly tested on fluvial-dominated modern rivers. A recent study on large tide-dominated modern river deltas ($n=5$) shows a consistent area of change in upstream to downstream trends in channel morphology, of which some are different than expected backwater-mediated changes. Preliminary results of our study on a larger data set with tide-influenced deltas, show that the expected upstream-to-downstream changes in large tide-dominated deltas cannot be directly applied to smaller and/or tide-influenced deltas. This presentation will discuss the potential and shortcomings of combining previously established concepts to improve predictability of changes in tide-influenced channel morphology. Caution is needed when inferring knowledge from large and/or river-dominated delta plains, as the response scale to changes in controlling factors will be different depending on delta plain size and dominant controlling factors.

Proponente: **Massimiliano Ghinassi**