

Flow measurements in a simulated estuary bed

by

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ABSTRACT

The present work reports an experimental investigation carried out on a mini flume of 130 mm outer diameter. In this apparatus, in which a tangential turoidal flow is induced, one aims to simulate in laboratory, flow conditions similar to those observed in a natural estuary bed. The data were taken using a commercial 2D LDA system, enabling the simultaneous measurement of two velocity components. In the present experiments, it was investigated an aqueous solution of glycerine whose characteristics resemble those of the sediment laden fluid. It was also investigated the effect of a rough bed, moulded on a natural sediment. Various Reynolds numbers were investigated. The results show that local turbulence is closely linked to the onset of erosion. The presence of a rough wall increases the local turbulence levels and the occurrence of recirculation pockets in its vicinity.