

BUSTA A

- 1. Il candidato illustri i sistemi informatici di sua conoscenza utili per la gestione analisi dei dati territoriali e infrastrutturali ai fini della progettazione di un'opera civile**

Letture e traduzione

River dunes, dynamic bedforms in the river bed, limit navigable depths during low flows and increase bed roughness. To predict the navigable depth or where maintenance dredging is needed, a numerical dune development model can be a powerful tool.

BUSTA B

- 1. Il candidato illustri il possibile utilizzo di strumenti informatici (CAD, GIS, BIM, ecc.) per la gestione e l'analisi di dati territoriali**

Lettura e traduzione

To study the effect of sediment transport on dune shape and propagation, four different sediment transport models were applied in an existing dune development model. Each sediment transport model was able to simulate dune propagation, while only sediment transport models based on the shear stress reshaped the river dunes.

BUSTA C

1. Il candidato illustri le tecniche di modellazione e simulazione in campo idraulico e/o idrologico

Letture e traduzione

The tested sediment transport models can simulate dune celerity similar to observations and realistic, though different, dune shapes for low and median discharges. Implementation of a gravitational bed slope effect combined with a critical shear stress results in low angle dunes, which are representative for river dunes during low river flows. Sediment transport models with spatial relaxation, also result in low angle dunes.