EXPERIMENTAL APPROACH THE STUDY OF THE INTERACTION WATER-SEDIMENT IN THE SWASH ZONE USING THE UDV

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Abstract:

The importance of-and the predicted increase in-the natural risks due to climate change will affect the coastal areas in numerous ways, which requires, more than ever, the installation of means and preventive solutions for a durable protection of the coastal system. For this purpose, the controls of coastal sedimentary dynamics under the physical and anthropogenic constraints have become important because the economical and social stake for durable development of the coastal zones have become higher. Our interest in the morphodynamic study of the swash zone, regarded as a fragile and dynamic area of the beach, particularly unforeseeable of the littoral, owing to the fact that it constitutes a true border between the marine field and the continental field. The swash zone is, under the effect of the interaction of the wave and the sediments, characterized by various parameters, such as, cut particles, porosity and homogeneity of particles among others, deserve to be elucidated to include and to understand the principle of operation within this zone. Here we present the results of calibration and measurements of the water-sediments interface experiment carried out in the channel of steady flow (L3.0 m x H0.25m x W0.10 m). Thereafter, the results are extrapolated to study the behaviour of velocity profile and the interaction of solid particles (sands) and water in the swash zone (the swell channel (L25 m x H1.0 m x W0.8m)) using Ultrasonic Doppler Velocimetry (UDV).