The Truc Vert/ECORS 2008 field experiment



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Introduction

In March and April 2008 a nearshore field experiment was conducted at Truc Vert, on the South Atlantic French coast (Figure 1). Truc Vert beach is characterized by an intertidal transverse-bar-rip system and a crescentic subtidal bar (Figure 2). The goal of the experiment was to measure hydrodynamic processes, sediment characteristics and transport, and morphological change over many spatial scales under energetic swell and macro-tidal conditions. Over 100 scientists from 16 institutes participated in the Truc Vert field experiment.

Instruments

Utrecht University participated by deploying various acoustical, optical, and electro-magnetic instruments (1) to measure vertical profiles of hydrodynamics (from turbulence quantities to mean flows) and of sediment concentration, and (2) to gain insight in the intra-tidal bed variability due to bed forms and large-scale erosion/sedimentation patterns. The instrumented rig (Figure 3) was positioned around the spring-tide low-water level on a shoal between two intertidal rips.

Figure 1 Field site location



Data and first findings



Figure 2 Bathymetric map of the study area at the onset of the field experiment. The black dot is the position of the rig deployed by Utrecht University. Note the welldeveloped crescentic subtidal bar and the two rip channels south of the instrumented rig. White areas indicate missing data.

(m)





Figure 3 Instrumented rig. The instruments comprised 3 Sontek acoustical doppler velocimeters, a pressure sensor, 2 electromagnetic flowmeters, 7 optical backscatter sensors, an acoustical backscatter sensor, a ripple scanner, and an altimeter. Measurements were typically performed at 4 to 10 Hz continuously.

(kg/m²/s)

σ

Geosciences



Height above the bed for sediment fluxes



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