

Apports du satellite SWOT pour la caractérisation des zones estuariennes : exemple du système de la Saigon – Dong Nai, Vietnam.

Contribution of the SWOT satellite for the characterization of estuarine areas: example of the Saigon - Dong Nai, Vietnam.

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Estuaries form a transition zone between river environments and maritime environments and are subject both to marine influences such as tides (Figure 1), waves, and the influx of saline water, and to fluvial influences such as flows of freshwater and sediment. These systems are thus, very complex from the hydrodynamic and sedimentary point of view.

This is particularly true in South East Asia and especially in the estuarine system of the Saigon-Dong Nai rivers (Figure 2) with the observation of a strong coastal erosion [1]. Field campaigns [2] and laboratory experiments [3] to characterise sediment particles and flocculation in this region have already been carried out. However, a precise hydrodynamic characterisation is missing.

Based on Camenen et al. 2021, we are studying the adaptation of its methodology by crossing in-situ measurements and SWOT measurements. The in situ measurements come from an unprecedented field campaign (October – November 2022) in Ho Chi Minh City, Vietnam. During this campaign 6 high resolution water level sensors were installed and 4 ADCP campaigns were carried out in the Saigon-Dong Nai system (Figure 3).

We propose a presentation of our preliminary results and hints for a good hydrodynamic understanding of this system before the implementation of a sediment transport component.

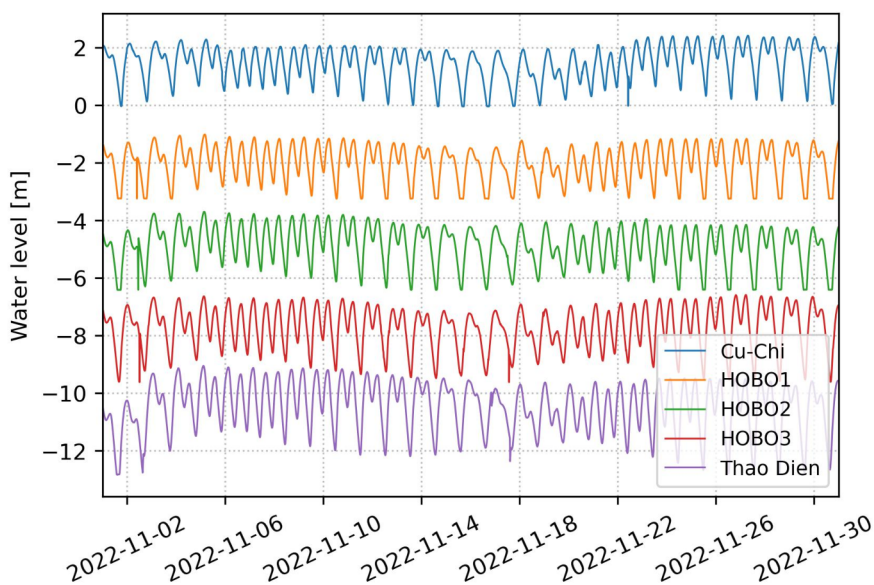


Figure 1: Examples of measured water levels (displaced by 0.4 meters from each other) on the Saigon river branch of the Saigon-Dong Nai system during the field campaign of 2022 in Ho Chi Minh City, Vietnam. The location of the water level sensors (Cu Chi, HOB0s and Thao Dien) is shown in Figure 3.

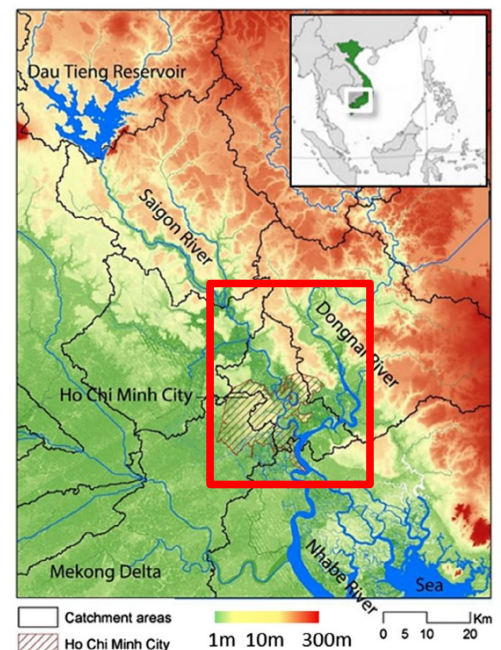


Figure 2: Elevation Map; the green color corresponds to an altitude lower than 1.5 m (adapted from [4]). The red box refers to the area shown in Figure 3.

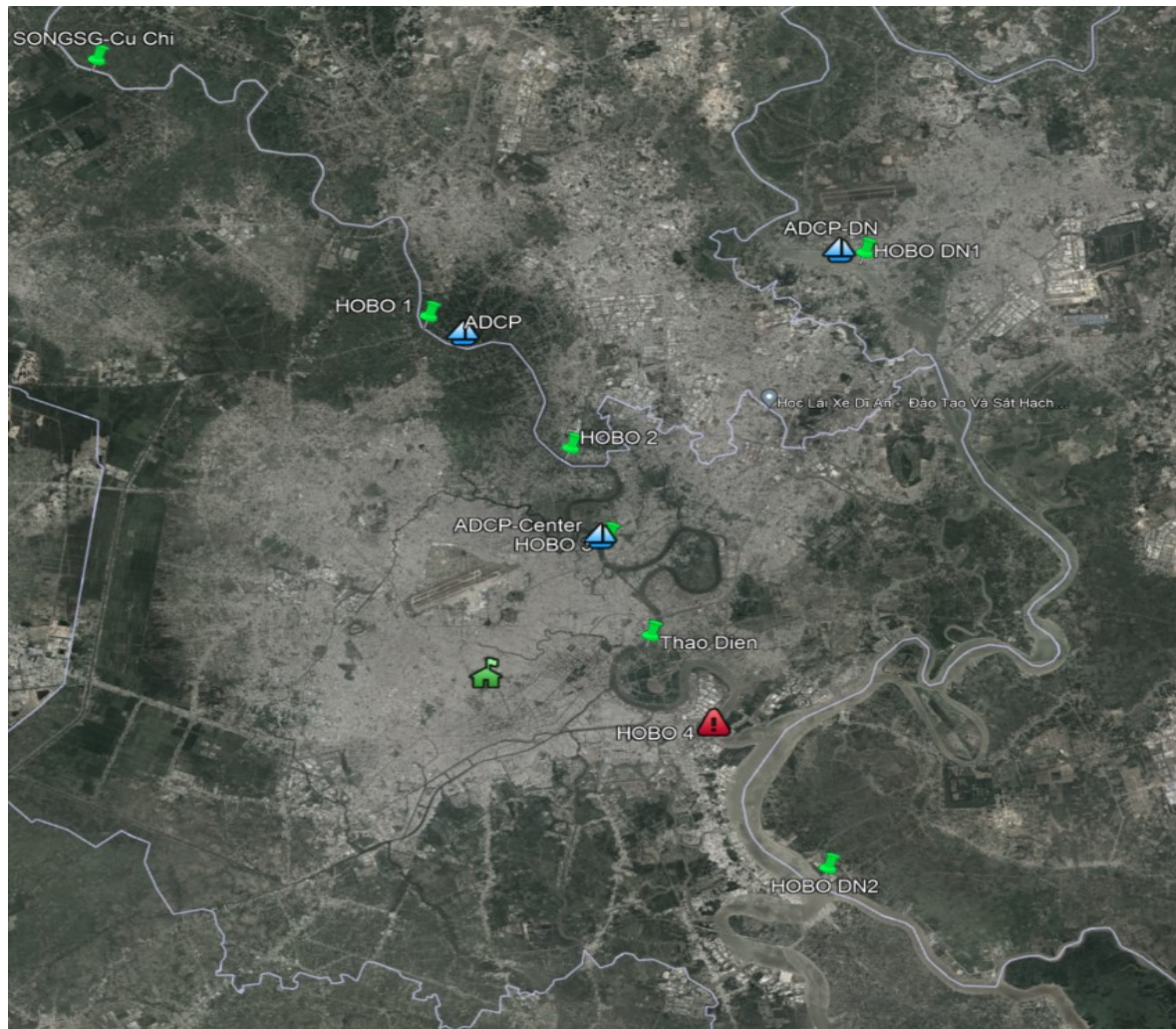


Figure 3: Location of the water level pressure sensors (green pins) and ADCP campaigns (blue boat). Lost sensor represented with red triangle.

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