



Side Event 3

Monitoring of hydrodynamic and morphological parameters by imagery video at Grand Popo beach in *Benin*

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Reçu le 13/12/2016; publié le 15/03/2017
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Abstract

Several studies have been carried out in the Gulf of Guinea to understand the complex dynamics that control the evolution of tropical coastal environments. The results, based on altimetric and re-analyzes data, revealed the variability of hydrodynamic and morphological processes. These results were validated in the short term with field measurement campaigns. In this paper, we propose a validation of the seasonal and inter-seasonal variability from data collected with a video system installed at Grand Popo, Benin since February 2013 – September 2016. Its potential is assessing event and seasonal coastline behaviour have been demonstrated in a previous study. The video system was used to track the evolution of hydrodynamic parameters and beach's state at high frequency and continuously. A comparison of video estimates is carried out with ERAInterim re-analysis data. The results show a strong correlation between seasonal cycles of hydrodynamic parameters and shoreline's position. However, the qualitative variation of the beach (beach slope) is still strongly linked to other parameters (tide and cross-shore transport processes). During the study period, the Grand Popo beach experienced a gradual decline of its shoreline, reflecting the presence of a strong trend or an inter-seasonal (inter-annual) cycle.

Keywords: video system; seasonal cycle; shoreline; waves; beach slope; alongshore sediment transport; Bight of Benin; Inter-seasonal variability.



Commission Sous-Régionale des Pêches
Sub-Regional Fisheries Commission



International Conference ICAWA 2016

Extended book of Abstract

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ISBN: 978-2-9553602-0-5



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Patrice BREHMER (IRD-France; Dakar), Babacar BA (CSRP, Sub-Region; Banjul) & Gerd KRAUS (TI, Germany; Hamburg).

TECHNICAL SUPPORT: Marie Madeleine GOMEZ (CSRP), Ndagoue DIOGOUL (IRD-UCAD).

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ISBN: 978-2-9553602-0-5

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COVER DESIGN: AWA (BMBF – IRD) project

LOGO AND FLYERS: Laurent CORSINI (IRD)

TRANSLATION: Amadou NDIONE (independent)

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