



## Side Event 3

## Nearshore Sedimentary transfer: On Flash Rip Activity Quantification

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### Abstract

The coastal zone of the Gulf of Guinea is exposed to high-energy ocean swell generated in the South Atlantic. This zone is under both increasing societal pressure and the threat of coastal erosion. In order to understand the primary hydrodynamic and sediment processes along this stretch of coast, an intensive field campaign was conducted at Grand-Popo beach in Benin (12 to 19/03/2014). Flash rips current has been shown to occur repeatedly in this environment. This process is transient in both time and space, field data on it is scarce, with video monitoring appearing as a relevant approach to capture their dynamics on large temporal and spatial scales. In this study, we implemented a method based on image processing in order to detect the presence of rips, to extract their characteristics and to further link them to the forcing conditions. 434 events recorded in 7 days: the method is relevant for flash rip study. The preliminary results show more occurrence for low incidence in comparison to available conditions but not representative enough to conclude and we report an increasing littoral drift (as the incidence angle) makes the flash rip dissipate faster. Lastly, directional spreading increases the lifetime of flash rip but not the crossshore extension. The perspective are to improve in situ measurement method to detect suspended matter in rip and turbulence and generation mechanisms, to deploy two coupled ADCP of different frequencies and a collocated turbidimeter located in the flash rip neck will allow us to retrieve Reynold turbulent stresses components and to address the sediment grain size and concentration and lastly to make a proper statistical study on the available data.



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Extended book of Abstract

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