

## **Seasonal variability of sedimentary organic matter dynamics and microbial communities in a tropical intertidal mud bank (French Guiana)**

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The French Guiana coastline is characterized by the occurrence of unstable shore-attached mud banks, originating from the huge Amazon suspended sediment discharge. These structures can be temporally emerged at low tide and rapidly colonized by vegetation (mostly microphytobenthos and opportunistic mangroves), thus playing a key role in global biogeochemical cycles. This study aims to compare the organic matter (OM) dynamics and microbial communities in superficial sediments from an intertidal mud bank (pointe Isère) collected during the rainy (BIOBANK project, PIG CNRS 2014) and dry (VARIFLUX (EC2CO CNRS 2016) and CYCLEN (PIG CNRS 2016) projects) seasons. Sediment samples were studied (*i*) to determine the sedimentary OM characteristics with various geochemical proxies and the OM recycling processes (sediment-water exchanges), (*ii*) to identify the MPB distribution, composition, biomass and *in situ* production. In addition to significant differences in MPB characteristics between seasons, dissolved inorganic compounds fluxes at the sediment-water interface are higher during the dry season, probably linked to higher inputs of more labile OM to sediments. They thus reveal seasonal changes in the mud bank's biogeochemical (C, N) functioning and their role for associated pelagic and benthic ecosystems.