

Comparison of the metallic contamination and organic matter content of two mangroves in Fortaleza, Brazil

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Mangroves are trees or bushes growing closed to the sea in tropical zones and are immersed daily due to tides [1]. Even if they correspond to less than 0,2% of worldwide lands [2] mangrove is an important area due to its biodiversity, its capacity to stock carbon and its importance for local population (fishing, timber, cultural aspects) [1]. Mangroves ecosystem are threaten mainly by urbanization and deforestation [2]. It implies contamination by various pollutants including metals. This presentation aims to introduce preliminary results on «Spatial contamination of mangroves forest in Ceará, Brazil». Two mangroves close to a 3 millions inhabitants city in Northeast Brazil have been sampled in order to study sediments organic matter (OM) composition, metals and their interaction. They are differently impacted by urbanization. In each mangrove, 3 areas have been defined : upstream, middle and downstream related to their distance from the sea. In each area, sediment has been sampled at 0-5 cm and 15-20 cm depth and river water has been sampled and filtered through acetate and glass filters. CNS analysis and ICP-OES metal detection are made respectively on sediments and water samples. 3D Fluorescence and UV spectrometry are made on sediments samples after NaOH and HCl extraction. Results show that upstream Coco soil is richer in carbon than downstream at both 5 and 20 cm depth whereas the opposite trend is observed for Pacoti River. Both sediments are sulphur-rich. Pacoti and Coco river are carbon and nitrogen-rich upstream and have no significant sulphur content. Relative absorbance slope SR indicates terrestrial origin for upstream OM for Coco mangrove (ratio>1) and marine origin for middle and downstream OM. Opposite trend is noticed for Pacoti mangrove at both acid and basis extraction. Metal content will be discussed in the presentation after interpretation.

[1] Unep (2014).,The Importance of Mangroves to People: A Call to Action, 128p.

[2] Godoy, M. D. P., Meireles, A. J. A and Lacerda, L. D. (2018). Mangroves response to land use change in estuaries along the semiarid coast of Ceará, Brazil. *Journal of Coastal Research* (34), 524-533.