

**SESSION: Ecosystems, Biodiversity and Biodiscovery****MARS Themes:**

Understanding the connectivity between terrestrial, coastal and marine systems

**Title:**

Understanding the dynamics of microbial communities in the Congo River plume

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**Abstract:**

The Atlantic Ocean is the second largest ocean, which is split into North Atlantic and South Atlantic Oceans. The South Atlantic Ocean boundaries lie north of the equator and south of subtropical convergence. It houses remarkable microbial biodiversity; however, it is understudied. The Congo River flows into the South Atlantic Ocean, which discharges 40 000 m<sup>3</sup>/s of freshwater, making it the second largest river in the world. The Congo River transports large amounts of suspended matter. It forms a river plume, which is a freshened water mass formed in the sea. This is due to the Congo River discharge mixing with saline seawater. The plume extends 800 km offshore and transports nutrients, carbon, and contaminants. Therefore, it has an important role in global carbon fluxes. Dynamics refers to the changes in abundance of various members in a community, which is the types of organisms present and their relative proportions. External forces, such as temperature, nutrient supply, and physical mixing alter the community. It is important to understand how the microbiome affects the environment since the microbiome is important for maintaining climate and ecosystem stability. Also, they process half of the global biogeochemical flux, such as processing carbon, nitrogen and phosphorus.

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**Keywords:**

Congo River; Discharge; Microbial diversity