Monitoring water quantity and quality in Sahelian ponds and lakes

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Résumé

Surface waters play a pivotal role in the Sahelian region as they provide a critical water resource for livestock and people, they have an important impact on the ecosystems in terms of biodiversity and emission of greenhouse gases and they influence the spread of water-borne diseases. Surface waters are under pressure from anthropogenic, climatic and environmental constraints: important, and sometimes paradoxical, changes have been reported such as the increase in lake areas and volumes observed in Northem Mali.
Monitoring, modelling and better understanding the hydrological behaviour of water bodies in this region is therefore a key issue. However, their spatio-temporal dynamics is poorly known given, on the one hand, the scarce in-situ data available and the high spatial and temporal resolution necessary to follow Sahelian water bodies from space, and, on the other hand, the difficulties for land surface models to represent surface hydrology in these areas.

In this presentation, we will discuss some recent advances on the monitoring of water amount and water quality, related in particular to suspended particulate matter, in Sahelian ponds and lakes. This is done by combining in-situ measurements from the AMMA-CATCH observatory, remote sensing products by recently launched and forecoming satellite missions and modelling approaches.

Reaching an integrated vision of the hydrology of these water bodies is fundamental to better understand their seasonal, interannual and decadal variability and to forecast their possible future evolution.

References

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Mots-Clés: surface water, sahel, remote sensing, water turbidity