

*Capturing global-scale patterns of dam-induced changes in wetland seasonality and extent from Landsat-derived surface water extent data (1985–2015)*

**Supervisors**

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**Thematic Background**

Land System Science, Human-Environment Systems, Remote Sensing, GIS, Hydrology

**Objectives**

In recent decades, a growing body of case studies linked dam construction and the associated changes in the hydrologic regime to changes in wetlands. Dams dampen the seasonal variability of river discharge for the production of hydropower, or divert of large quantities of water for irrigation, thereby potentially reducing water tables as well as the seasonality of wetland flooding. Contrastingly, reservoir flooding has been related to increasing water tables in neighboring wetlands. To date, our knowledge about the spatial patterns of dam-induced changes in wetland extent is limited to single case studies, general patterns of dam-induced wetland changes hence remain poorly understood. Consequently, the objectives of this thesis are to:

- 1) Screen the literature on dam-induced wetland changes to compile a set of 10 or more study sites.
- 2) Explore and compare wetland seasonality and extents in periods before and after dam commissioning using a dataset on monthly global surface water extent (1985 – 2015).

**Target group & pre-requisites**

We invite students with a strong interest in land system science and human-environment systems. Good knowledge of the programming languages R and/or Python, as well as experience in handling spatial datasets and statistical modelling are required. The thesis should be written in English language.

**Dates and Duration, Application Procedure**

Thesis duration encompasses 6 months after registration and should be handed in the latest by the end of November 2018. Interested students may directly contact [philippe.rufin@geo.hu-berlin.de](mailto:philippe.rufin@geo.hu-berlin.de) or any of the supervisors