



Technische Universität München



Faculty of Civil, Geo and  
Environmental Engineering

Chair of Hydrology and  
River Basin Management

## Study Project – Environmental Engineering

Workload: 12 ECTS, 360 hours

### Topic: Dynamic space-time migration of droughts in Central Asia under different global warming scenarios

#### Study Objective:

How global warming will affect the spatio-temporal migration characteristics of droughts is still unclear. The study project aims to compare the spatio-temporal migration characteristics of a single type of drought under different global warming scenarios.

#### Task:

In this study project, the task is divided into four parts:

- 1) Search for suitable datasets at the daily time scale;
- 2) Train the existing framework to identify three-dimensional (3D) droughts;
- 3) To analyse the migration trajectory and direction of the identified 3D drought types and characterise their spatio-temporal migration metrics;
- 4) Compare the differences in migration characteristics between SSP1-2.6, SSP2-4.5, SSP3-7.0, and SSP5-8.5 scenarios.

The dataset would be from remote sensing data and earth observation data. The type of drought in this work should be one of the following six types: precipitation, runoff, evaporation, soil moisture, vegetation, and total water storage.

#### Time:

Since 01.2024

#### Contact:

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