



TUM Critical Zone Observatory, Germany

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Founded 2011 the TUM Critical Zone Observatory run by the Technische Universität München and partners abroad is the first CZO within Germany. TUM CZO is both, a scientific as well as an education project. It is a watershed based observatory, but moving behind this focus.

In fact, two mountainous areas are integrated: (1) The Ammer Catchment area as an alpine and pre alpine research area in the northern limestone Alps and forelands south of Munich; (2) the Otter Creek Catchment in the Bavarian Forest with a crystalline setting (Granite, Gneiss) as a mid mountainous area near Regensburg; and partly the mountainous Bavarian Forest National Park.

The Ammer Catchment is a high energy system as well as a sensitive climate system with past glacial elements. The lithology shows mostly carbonates from Tertiary and Mesozoic times (e.g. Flysch). Source-to-sink processes are characteristic for the Ammer Catchment down to the last glacial Ammer Lake as the regional erosion and deposition base. The consideration of distal depositional environments, the integration of upstream and downstream landscape effects are characteristic for the Ammer Catchment as well. Long term datasets exist in many regards.

The Otter Creek catchment area is developed in a granitic environment, rich in saprolites. As a mid mountainous catchment the energy system is facing lower stage. Hence, it is ideal comparing both of them.

Both TUM CZO Catchments: The selected catchments capture the depositional environment. Both catchment areas include historical impacts and rapid land use change. Crosscutting themes across both sites are inbuilt. Questions of ability to capture such gradients along climosequence, chronosequence, anthroposequence are essential.