2017 ENIGMA ITN Fall Meeting

Field-site location and description

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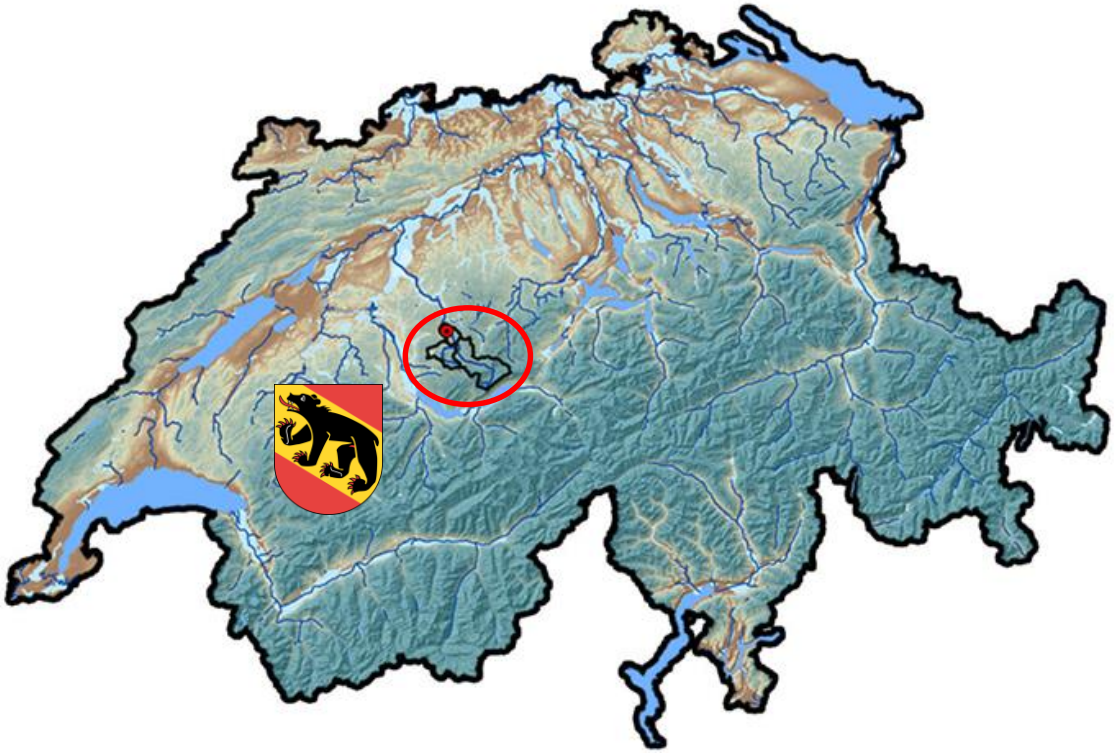
1. LOCATION

- **Valley of the Emme River**, the Emmental (Canton of Bern, Switzerland)

Home



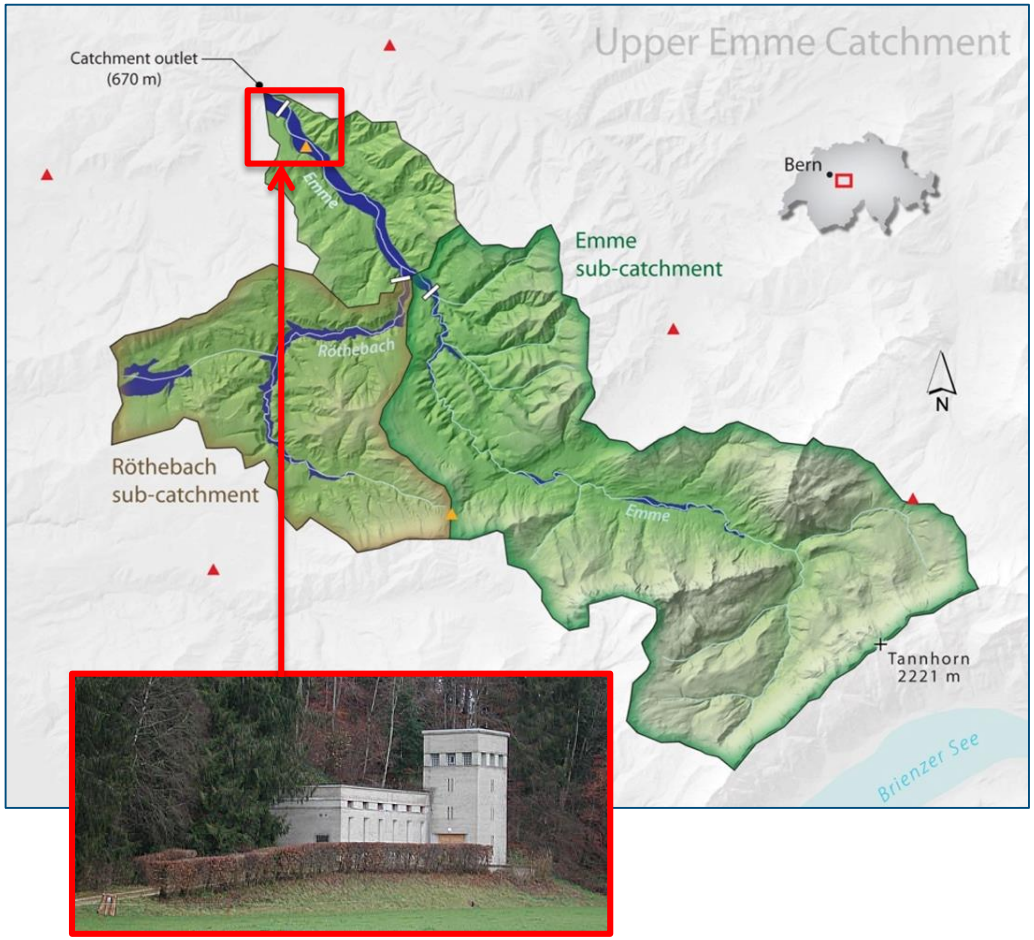
2. WHY THE EMMENTAL?

UNIVERSITÉ DE NEUCHÂTEL

HIGHLY DYNAMIC SYSTEM

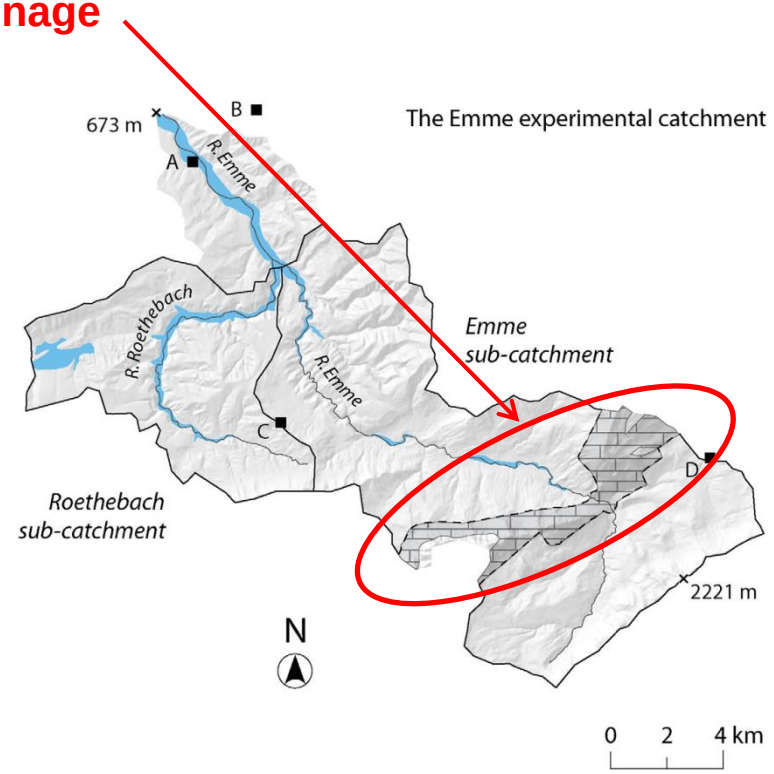
3. CATCHMENT FEATURES

- Area: **194 km²**
- River system divided into **three areas** (sub-catchments)
- **Variable-space** climate characteristics
- Mean annual discharge: **5.5 m³/s** (higher during snowmelt)
- **45% of drinking water** for Bern & its surroundings comes from GW **pumped** in the Emmental
- **90% of recharge** originates from **river infiltration**

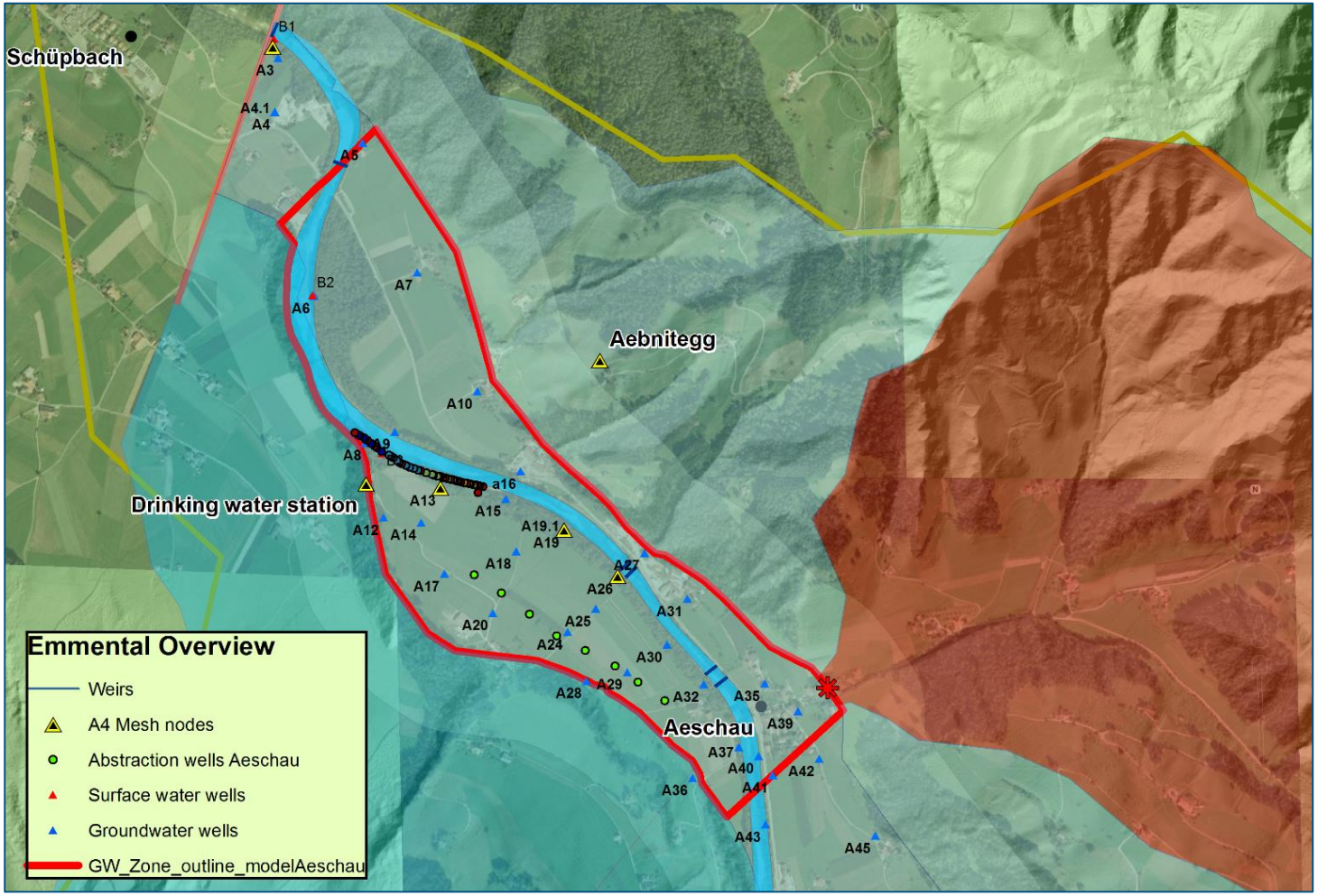


4. HYDROGEOLOGICAL CHARACTERISTICS

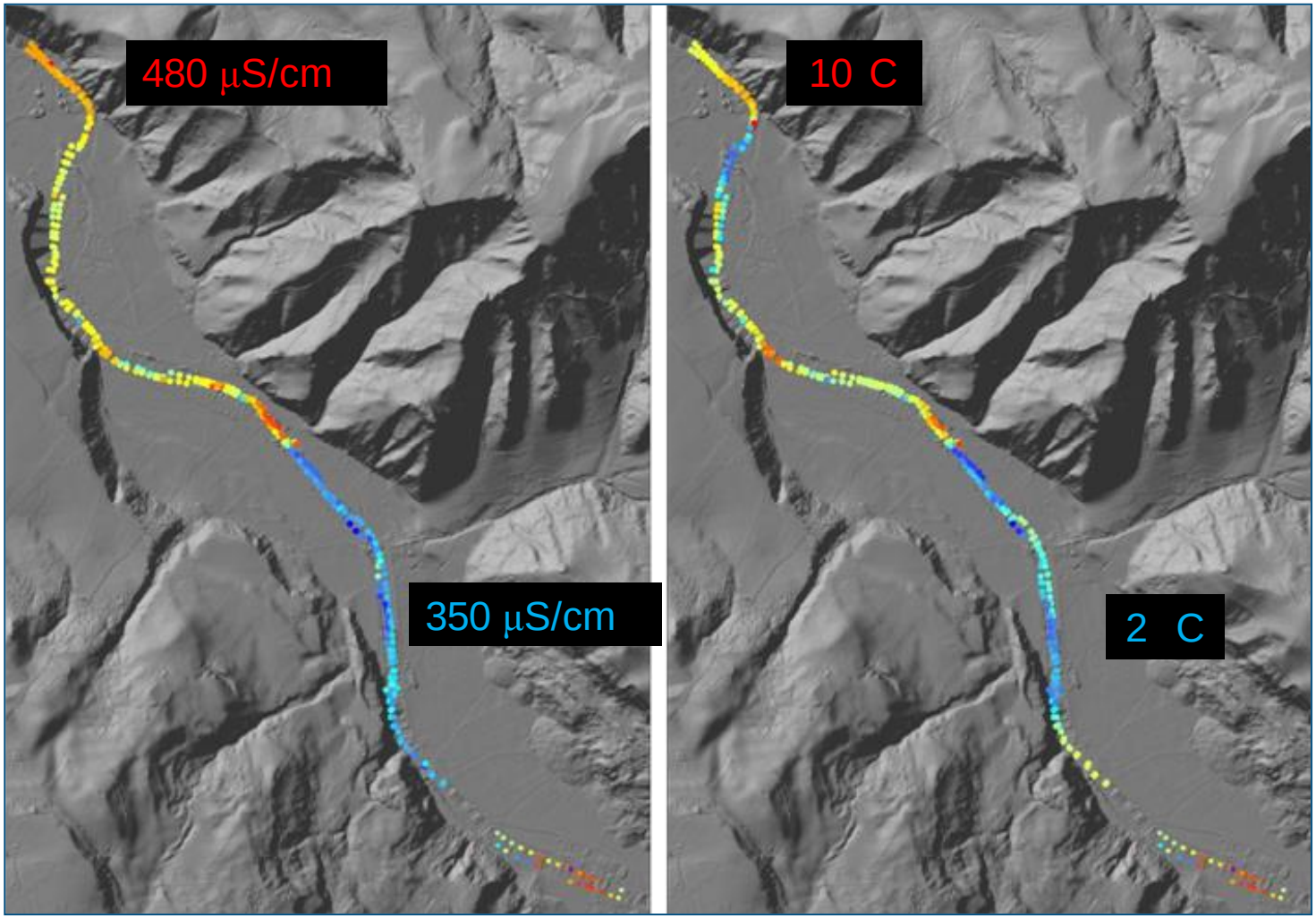
- **Valley** formed by Pleistocene glaciofluvial sediments underlying more recent fluvial deposits
  - Upper part **highly karstic** ➡ **Extreme Drainage**
- **Riverbed** ➡ Coarse gravel-bed
- **Alluvial aquifer** ➡ Quaternary deposits
- **Bedrock** ➡ Well-cemented Tertiary sandstone, conglomerates and marls (up to 90 m deep)
- Lower alluvium + bedrock ➡ **AQUITARD**
- S=0.1 ➡ **Unconfined aquifer**



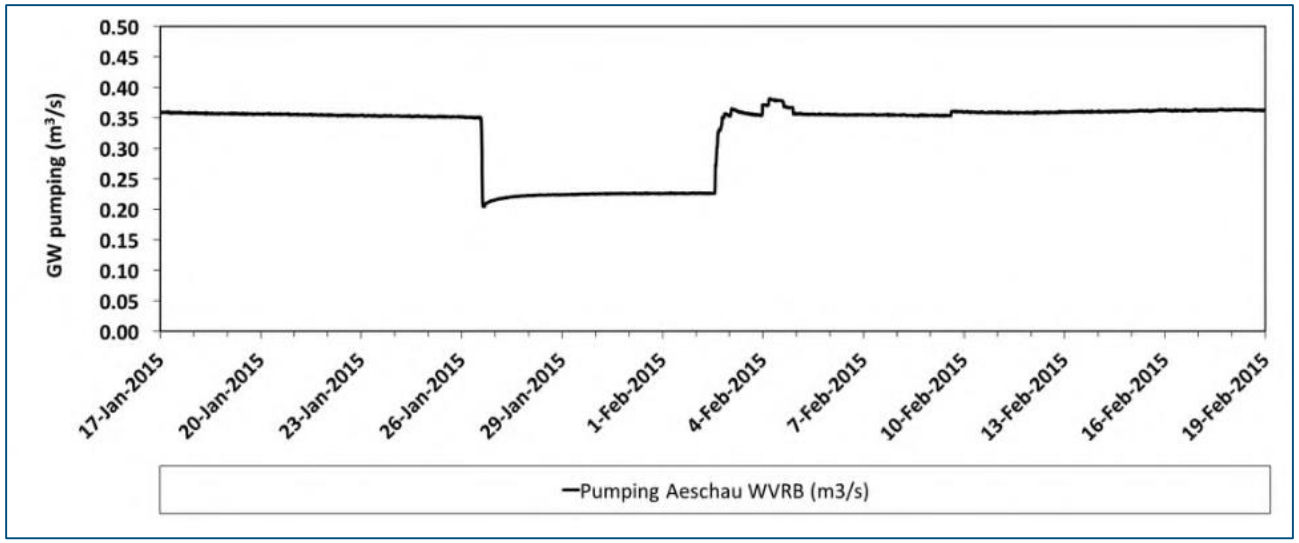
5. WELL ESTABLISHED MEASUREMENT NETWORK

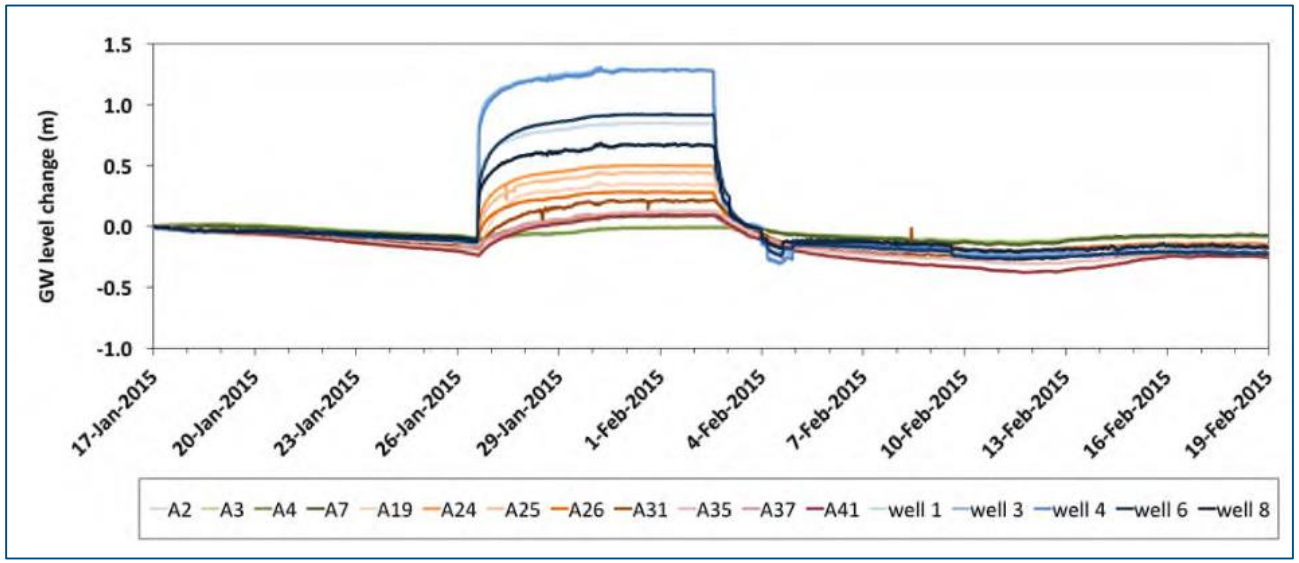


6. WEIRS CHANGE GAINING/LOSING CONDITIONS



7. CONTROLLED PUMPING EXPERIMENT





THANK YOU FOR YOUR ATTENTION!

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