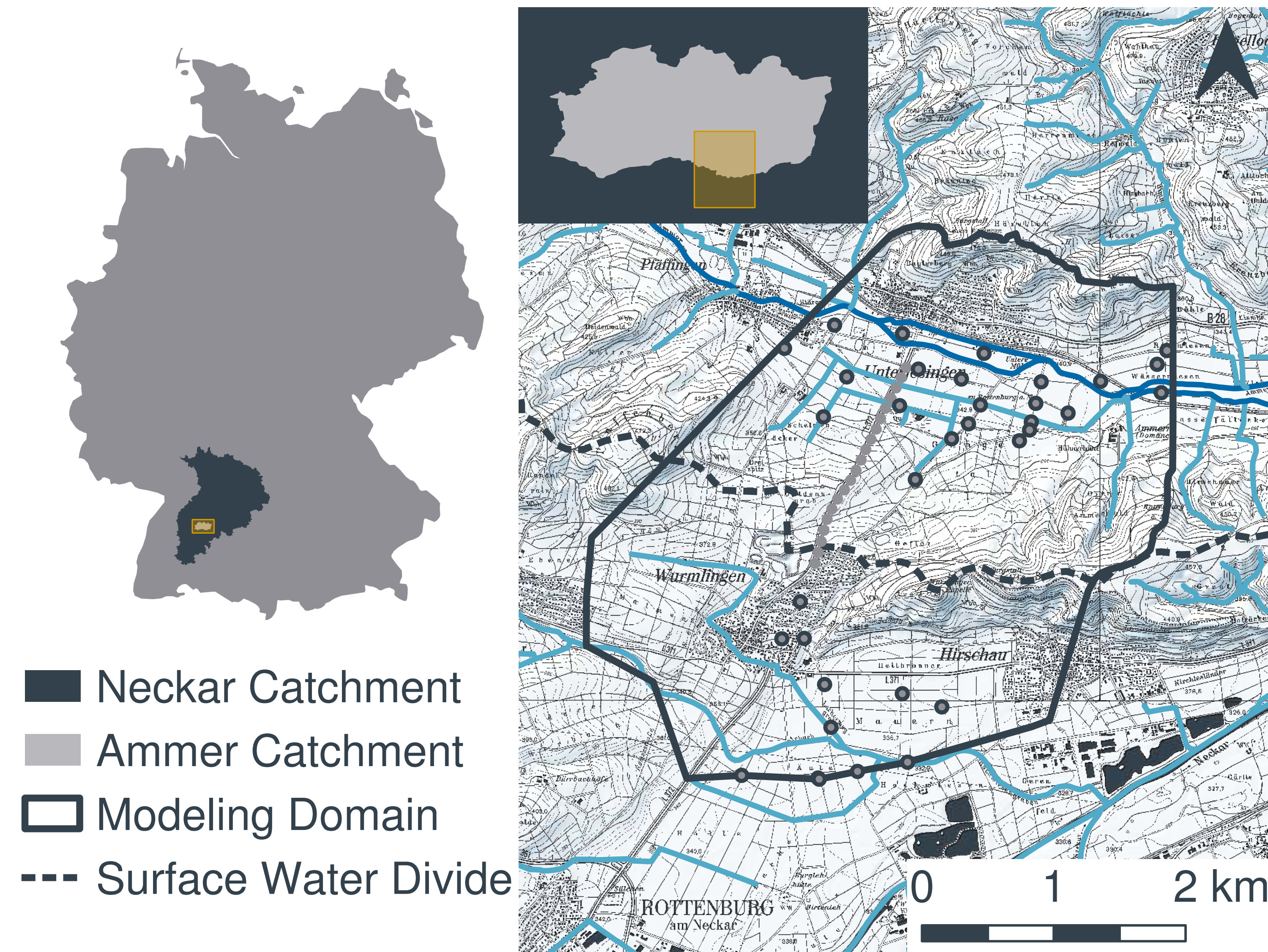




Problem

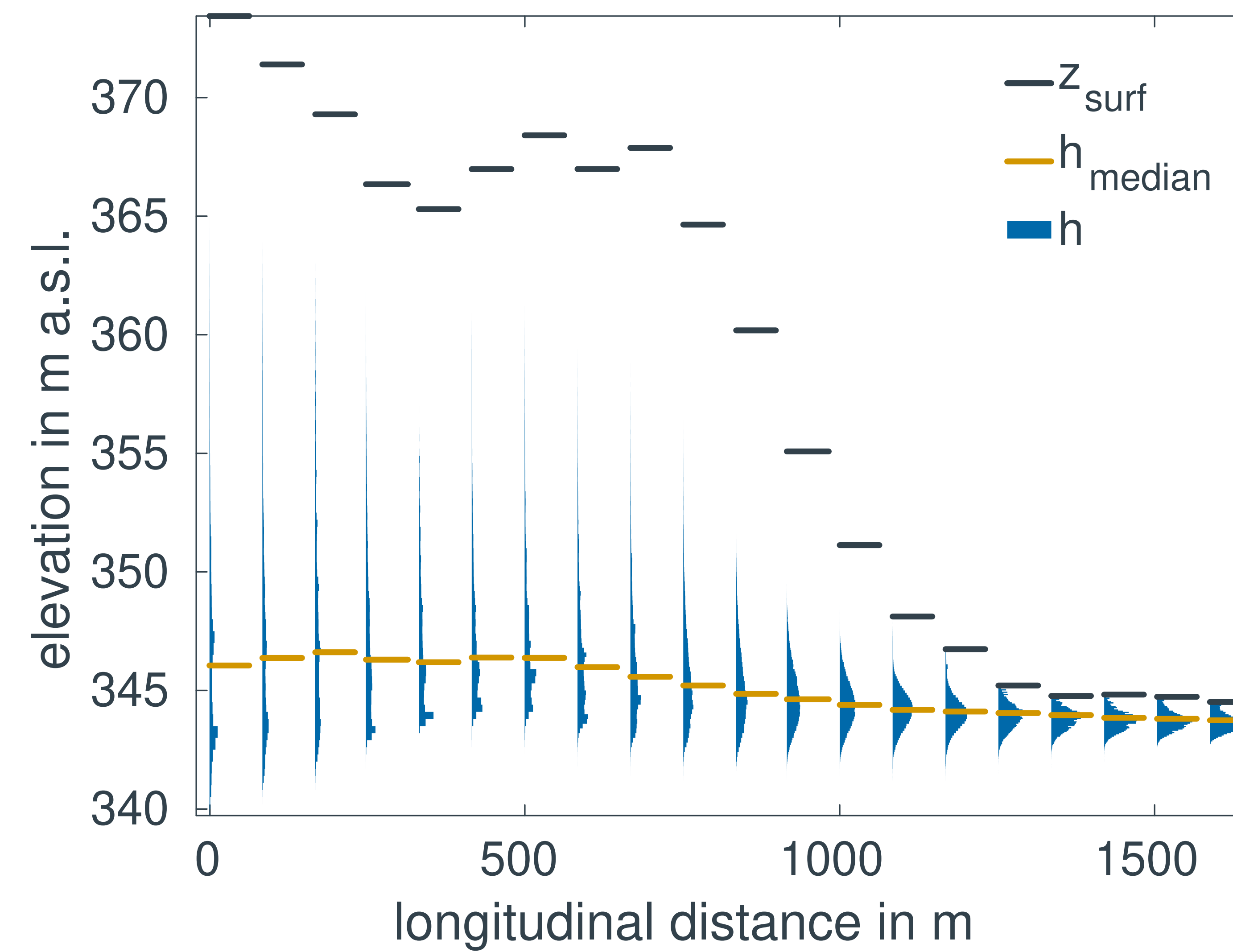
Delineation of Groundwater Divide



- optimal **well placement**...
 ...to locate groundwater divide?
- southern Ammer floodplain
 - Unterjesingen ↔ Wurmlingen
 - Ammer vs. Neckar
 - 20 possible well locations
- goal: **find best** combination of 3

Approach

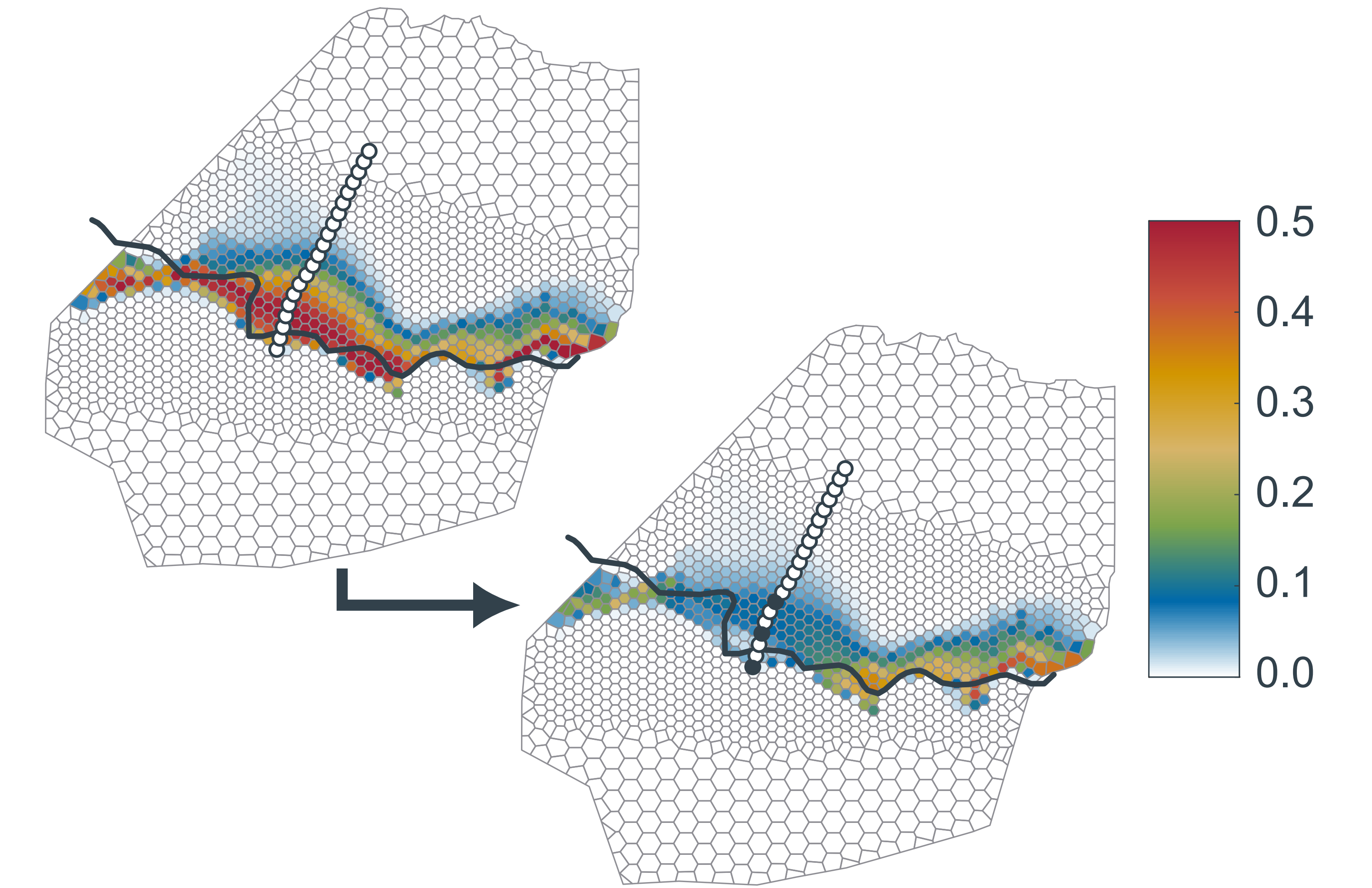
Novel Stochastic Framework



- ensemble flow **modeling**
- plausibility check
- **particle tracking**
 - Ammer → ∅
 - Neckar → ●
- optimal design routine
 - **PreDIA**
 - Bayesian averaging

Results

Measure in the Unknown Regions



- ▲ place wells far from existing ones
- ↔ choose medium spacing
- ⚡ best designs are non-trivial
- 👍 **uncertainty reduction** of > 50 %

submitted to
Frontiers in Earth Science