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A new high-resolution groundwater isoscape for south-east Germany: insights from differences in relation to precipitation

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Content

Table S1: Input parameters for the empirical Bayesian Kriging algorithm in ArcGIS Pro 2.9.0.

Parameter	Value
Output cell size	1375.868 m
Data transformation type	None
Semivariogram model type	Power
Max number of points in each local model	100
Local model area overlap factor	1
Number of simulated semivariograms	100
Search Neighborhood	Standard circular
Max Neighbors	15
Min Neighbors	10
Sectortype	1
Angle	0
Radius	124879.519 m

Figure S1: Deuterium isoscape in groundwater

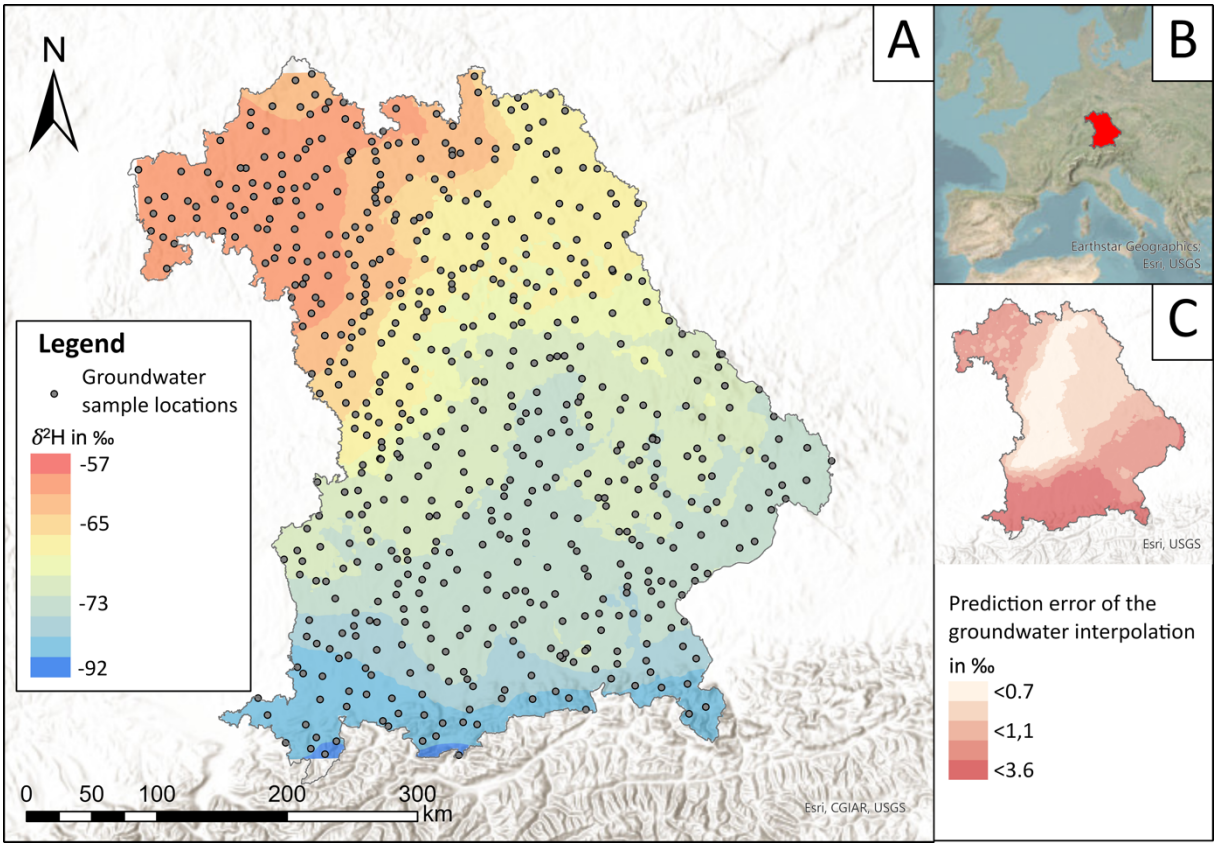

Figure S1: (a) Groundwater $\delta^{18}O$-isoscape (obtained with empirical Bayesian Kriging) with sample locations. (b) Location of the study area in Europe. (c) Standard error of the interpolation prediction in ‰.

Figure S2: $\delta^{18}O$ isoscape in precipitation

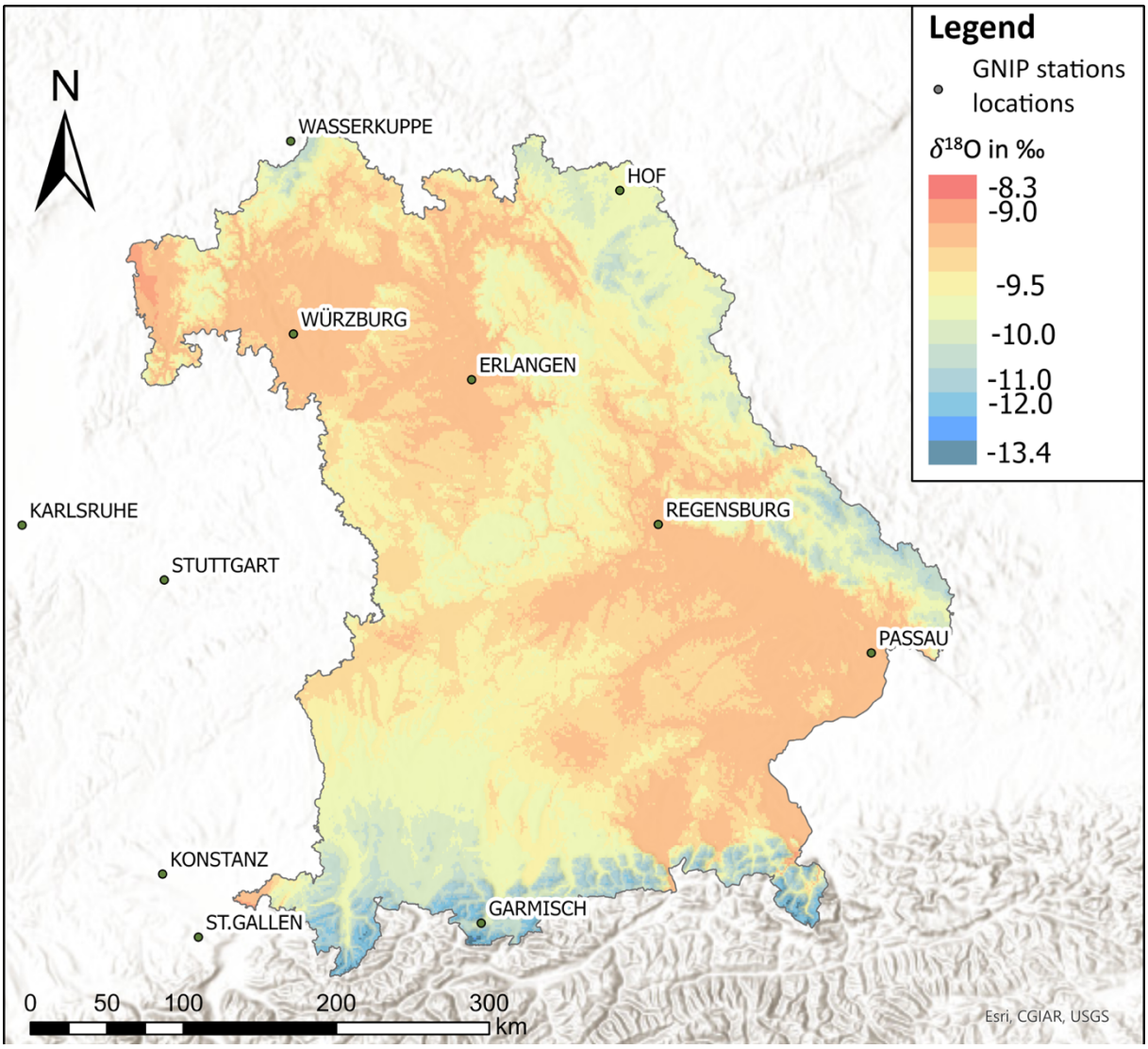

Figure S2: Isoscape of $\delta^{18}O$-values in precipitation (RCWIP model) and location of the 13 GNIP stations used for this study (isoscape adapted from Terzer et al. (2021).

Figure S3: Altitude effect on groundwater $\delta^{18}O$

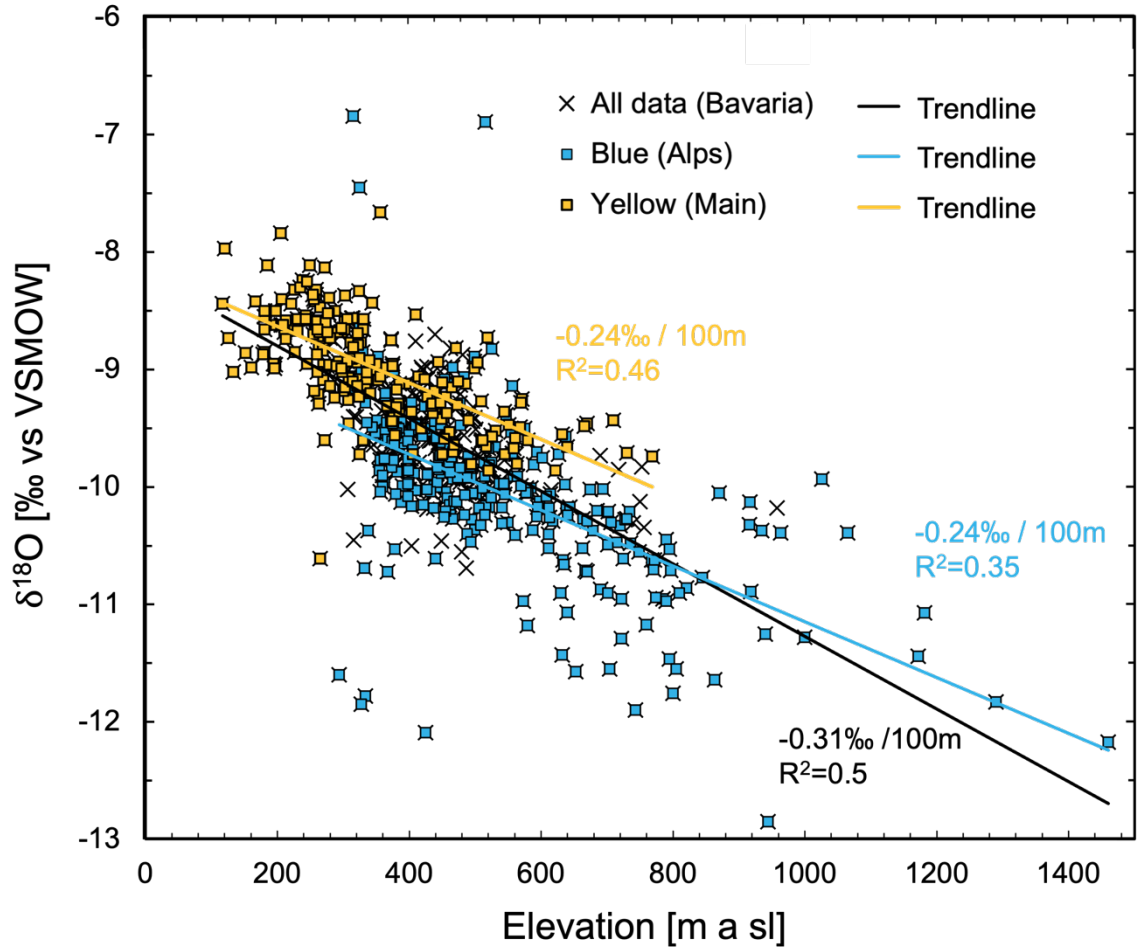

Figure S3: $\delta^{18}O$ values in groundwater [‰ vs V-SMOW] in relation to the station's elevation [m a sl] for all data in our study area (black crosses and trendline), the stations within the alpine cluster (blue squares and trendline) and the stations in the Main cluster (yellow squares and trendline). The corresponding slopes and of the trendlines are given in $\delta^{18}O$ ‰ per 100 m elevation.