

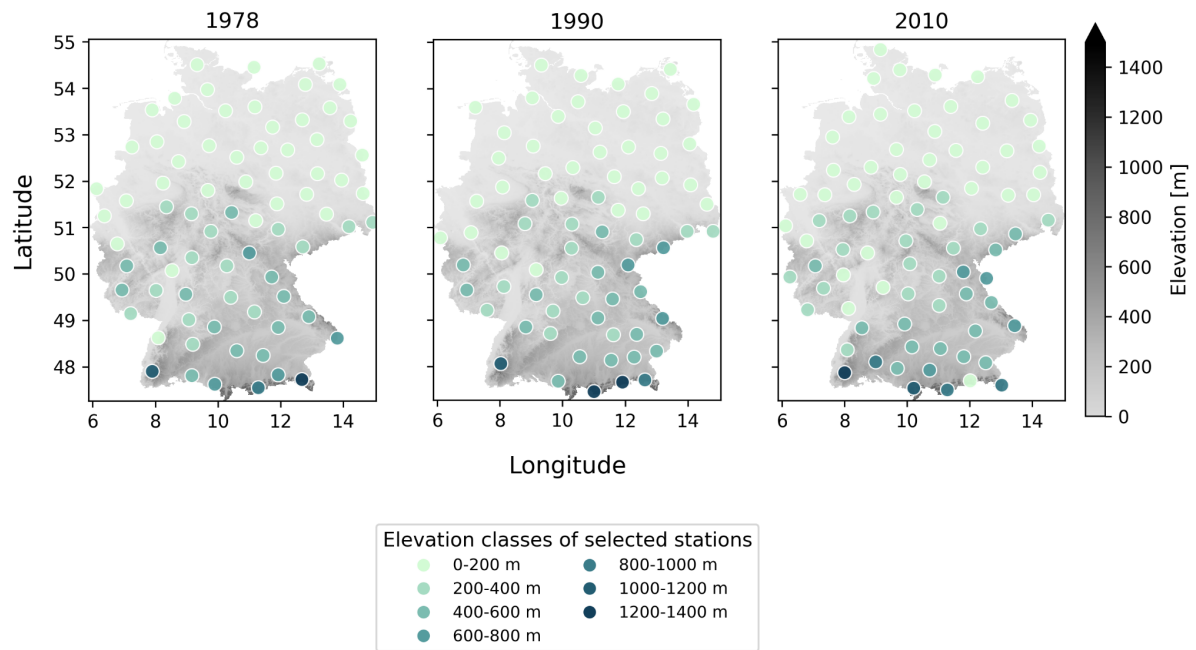


Figure S1: Spatial distribution of selected climate stations for the leave-one-out cross-validation for the winter seasons 1978/79, 1990/91, and 2010/11. The colors indicate different elevation classes.

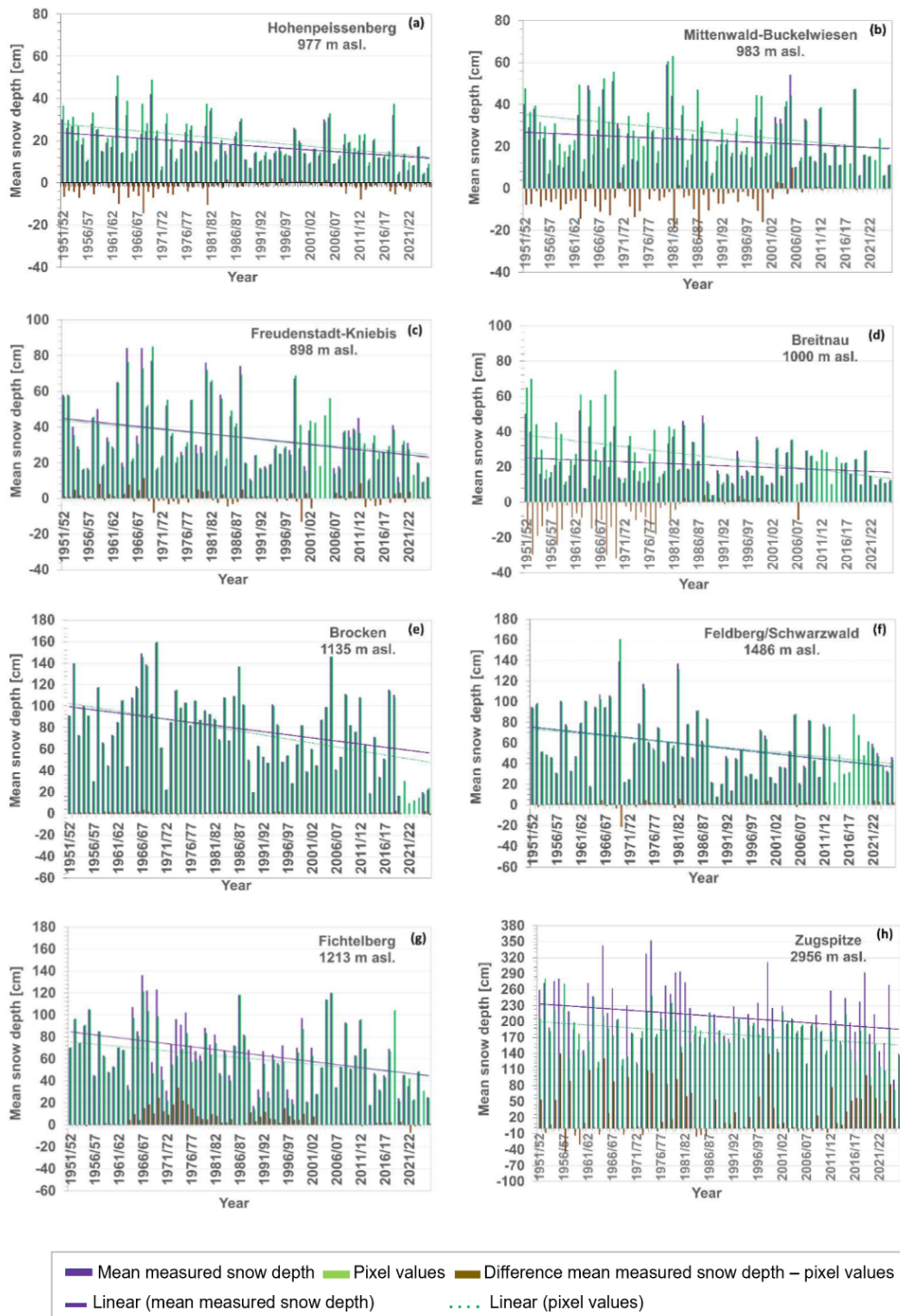


Figure S2: Comparison of observed mean seasonal snow depth at station locations (purple) with the corresponding SNOWRAS value for the grid cell containing each station. The difference between the station observation and the SNOWRAS value is shown in red. Linear trends for both the observed and SNOWRAS snow-depth series are included as a visual guide.

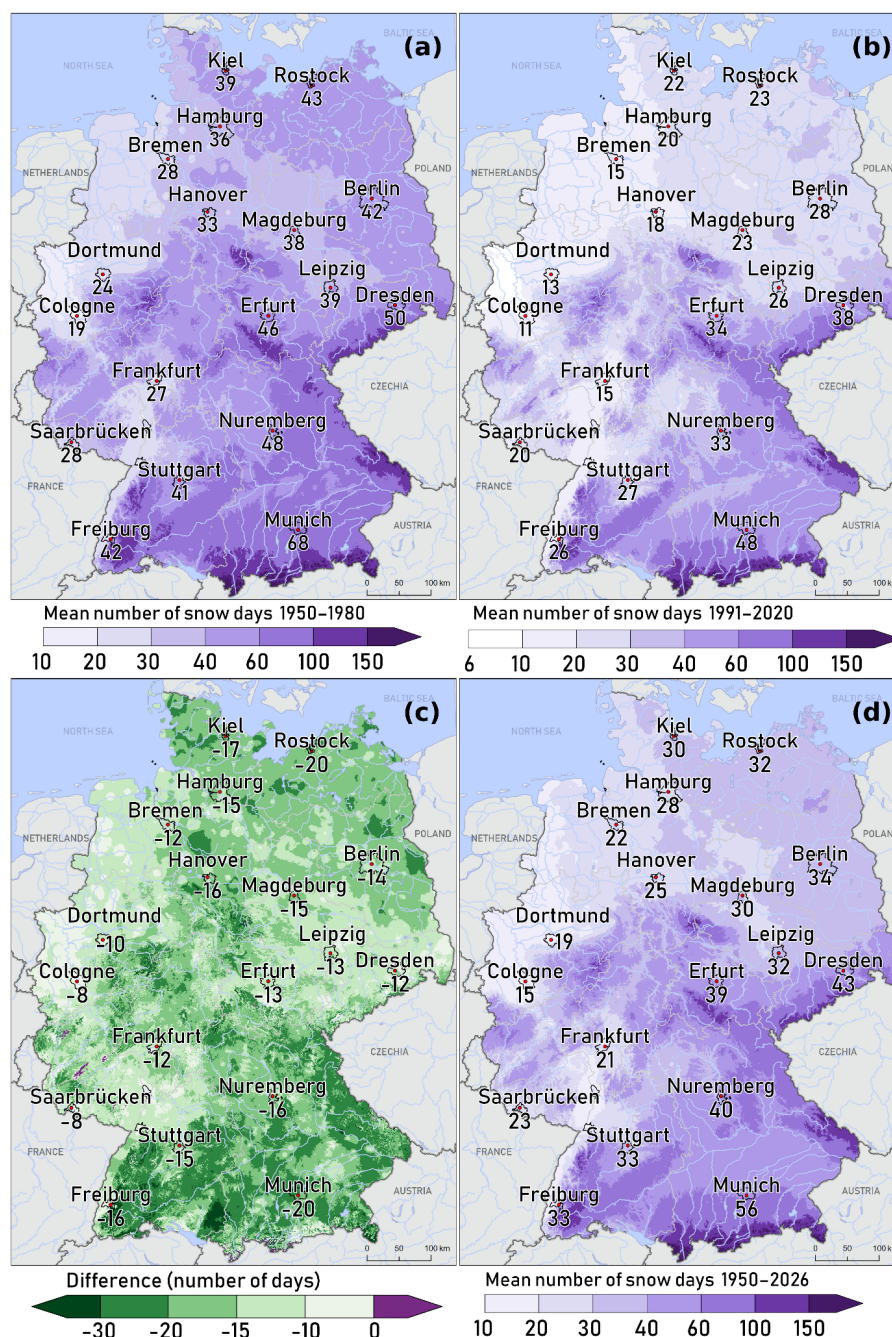


Figure S3: Spatial distribution of the number of snow days over Germany. (a) Mean seasonal number of snow days for the first three full decades of the dataset (1950/51–1979/80). (b) Mean seasonal number of snow days for the last three full decades of the dataset (1990/91–2019/20). (c) Difference in the seasonal number of snow days between 1990/91–2019/20 and 1950/51–1979/80, calculated as 1990/91–2019/20 minus 1950/51–1979/80; green colors indicate a lower number of snow days in 1990/91–2019/20 than in 1950/51–1979/80. (d) Mean seasonal number of snow days for the full period 1950/51 - 2025/26. Basemap © GeoBasis-DE/BKG 2024.

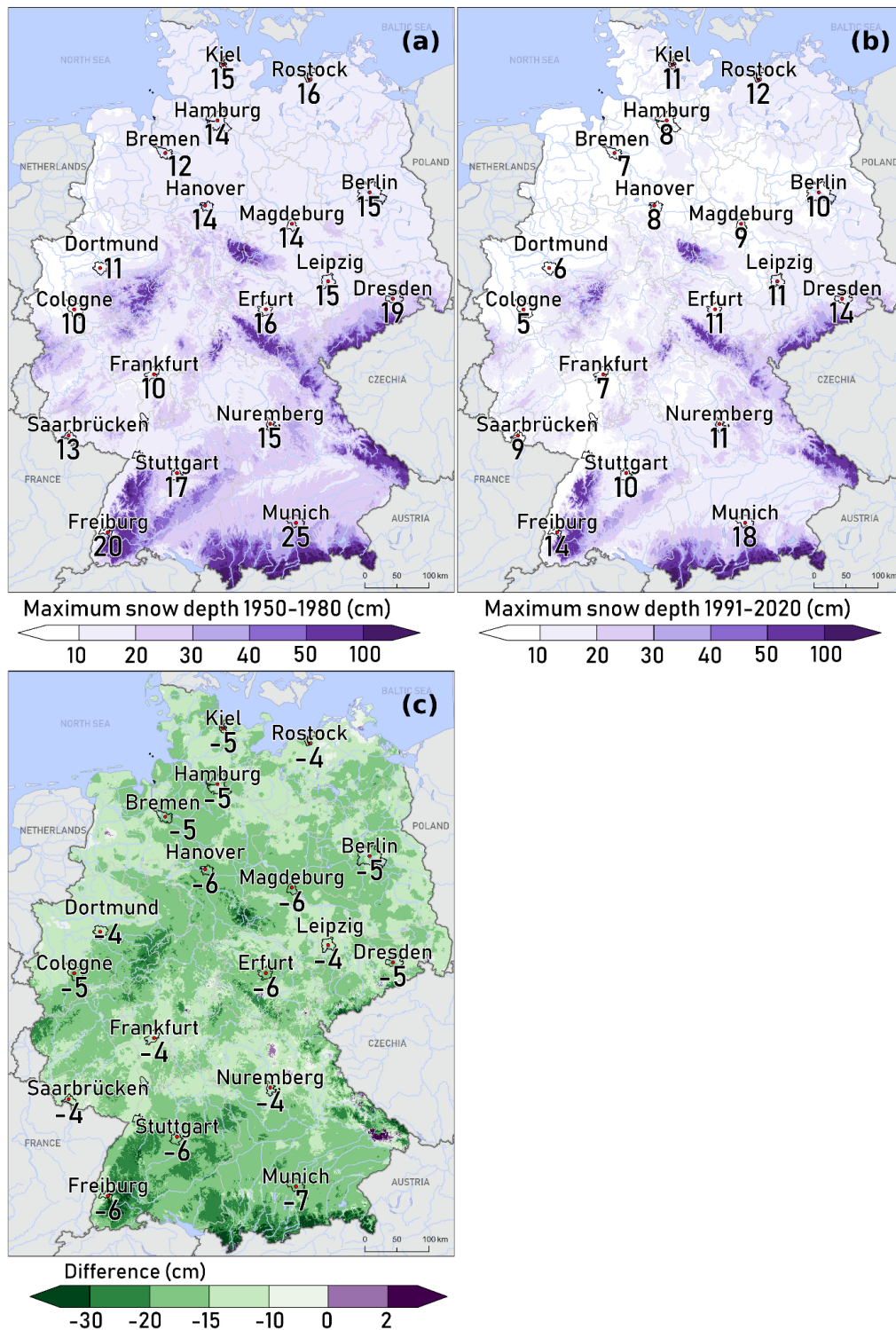


Figure S4: Spatial distribution of the maximum snow depth over Germany. (a) Maximum seasonal snow depth as a mean over the first three full decades of the dataset (1950/51–1979/80). (b) Maximum seasonal snow depth as a mean over the last three full decades of the dataset (1990/91–2019/20). (c) Difference of the maximum seasonal snow depth between 1990/91–2019/20 and 1950/51–1979/80, calculated as 1990/91–2019/20 minus 1950/51–1979/80; green colors indicate lower mean snow depth in 1990/91–2019/20 than in 1950/51–1979/80. Basemap © GeoBasis-DE/BKG 2024.

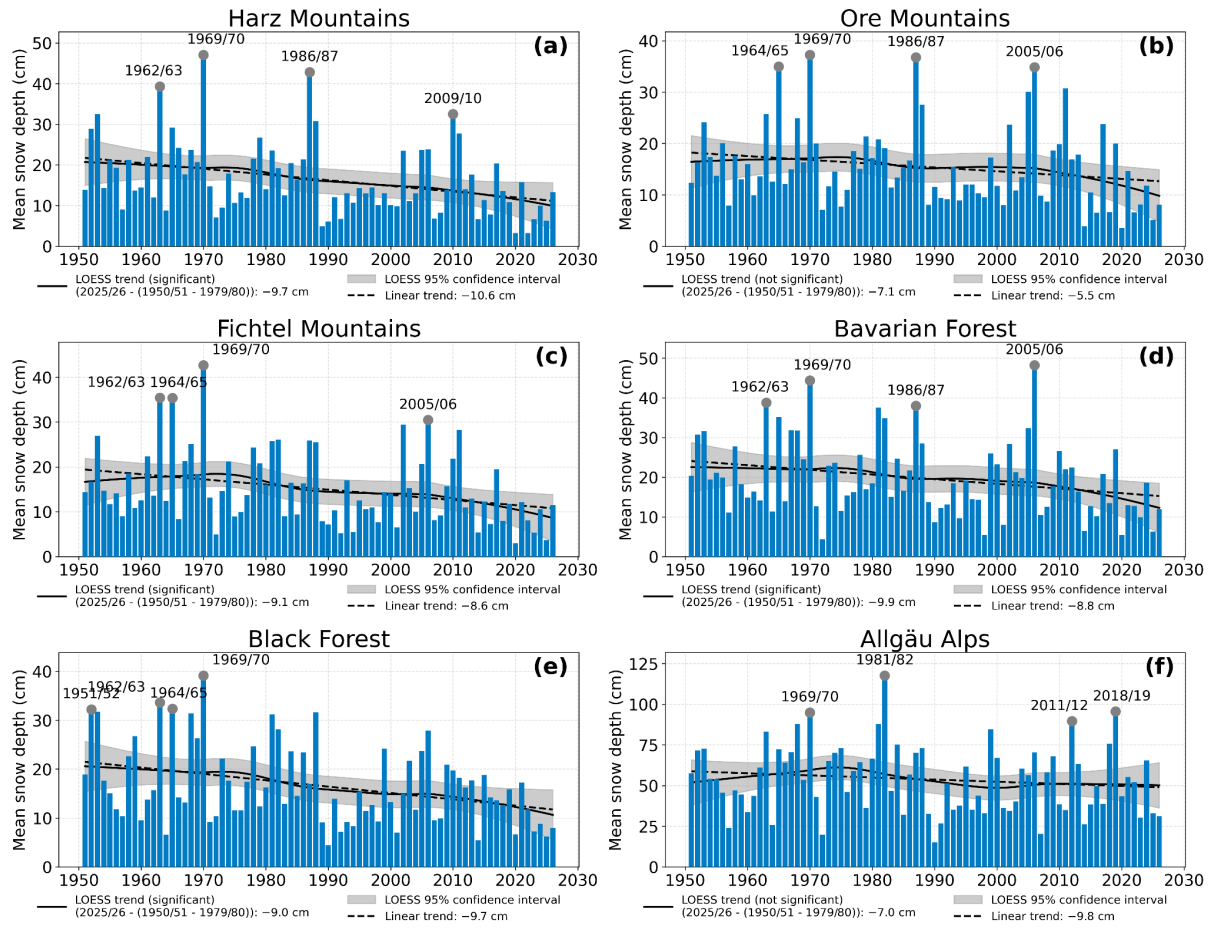


Figure S5: Seasonal mean snow depth from 1950/51 to 2025/26 as a spatial mean over various mountainous regions, including linear and LOESS trend estimates.