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Flood drivers and trends: a case study of the Geul River catchment (the Netherlands) over the past half century

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S1 Sensitivity of the extreme discharge event-based analysis to P_{MD} duration

Table S1: Mean relative frequencies for all stations of high flow events preceded by the defined extreme precipitation indicators for different P_{MD} accumulation periods.

P_{MD} duration	P_{99} [%]	P_{MD} [%]	P_{WAC} [%]	Compound I [%]	Compound II [%]	Compound III [%]
4-day		74.7			40.0	12.6
5-day		65.3			38.4	12.2
6-day		64.5			39.6	12.2
7-day	27.7	61.6	47.8	12.6	39.6	12.2
8-day		57.9			38.4	12.6
9-day		61.2			41.6	12.6
10-day		58.4			39.2	12.6

S2 Multi-temporal trend analysis

S2.1 Winter half-year

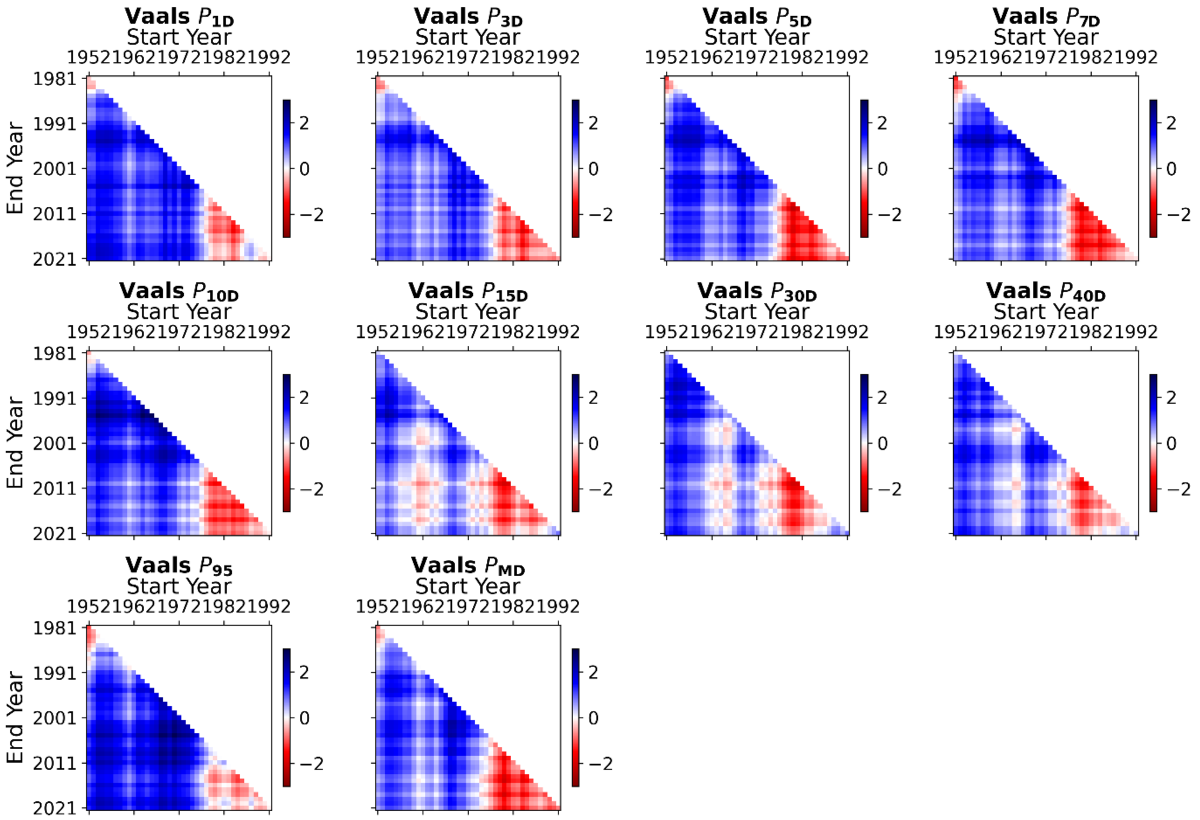

Figure S1. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Vaals for winter half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

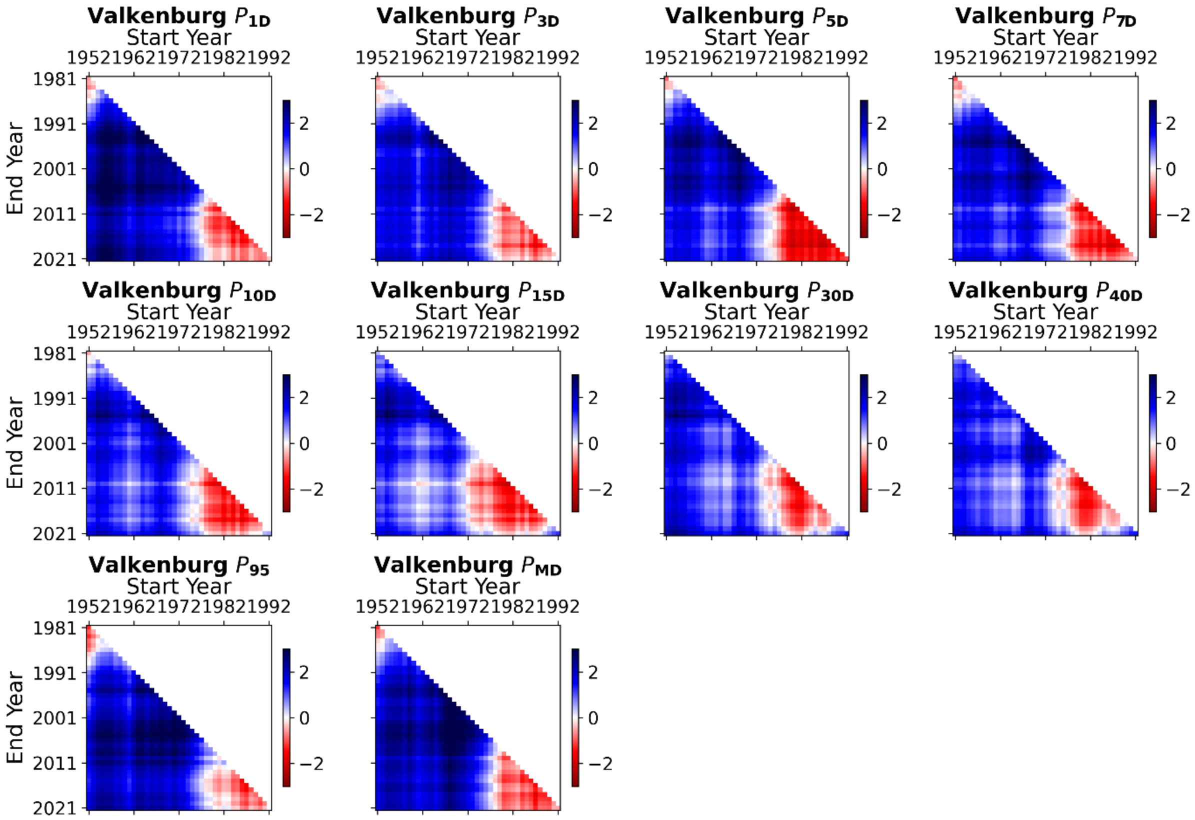

Figure S2. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Valkenburg for winter half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

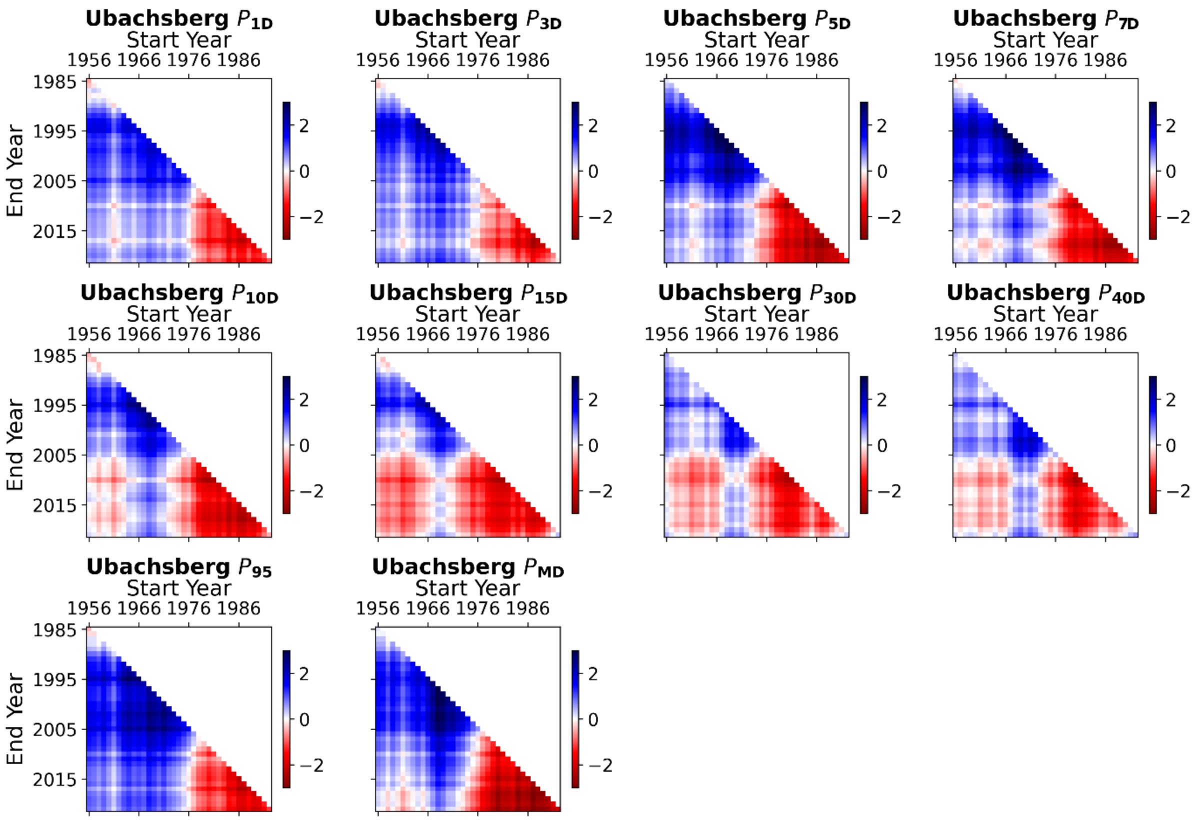

Figure S3. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Ubachsberg for winter half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

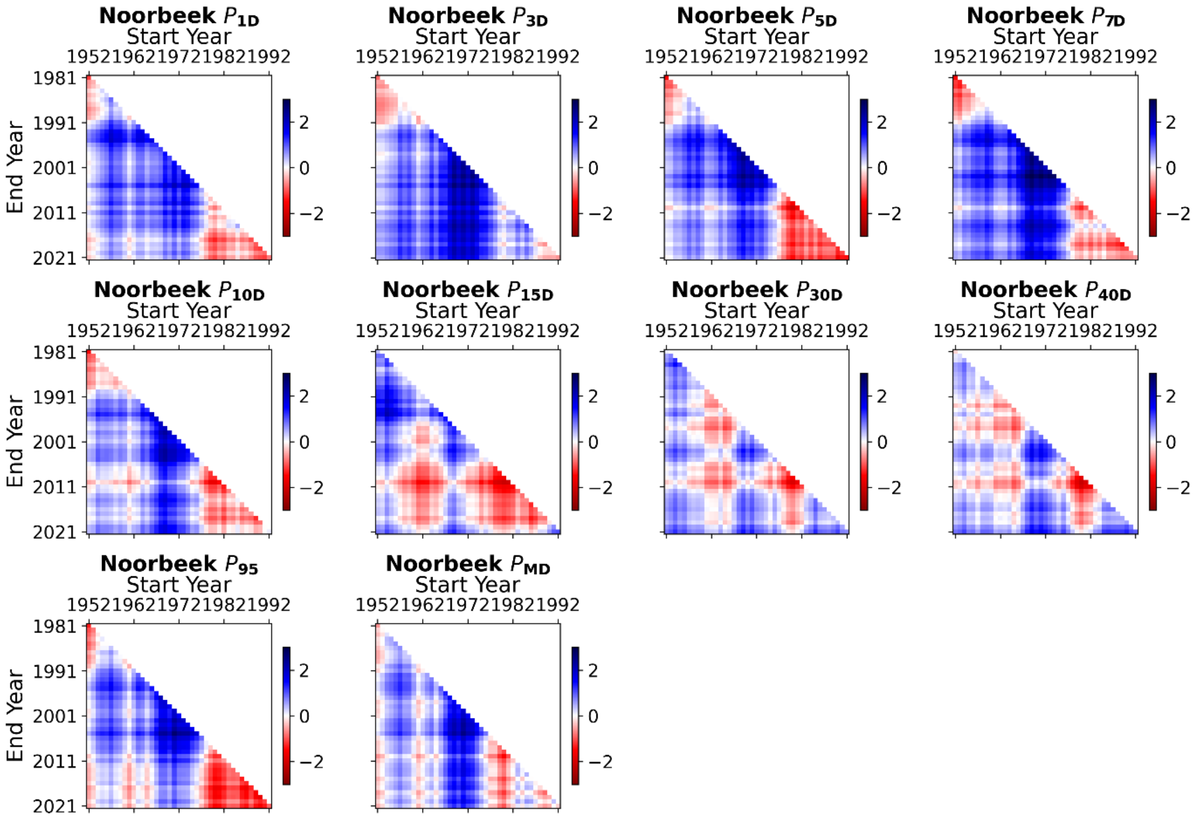

Figure S4. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Noorbeek for winter half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

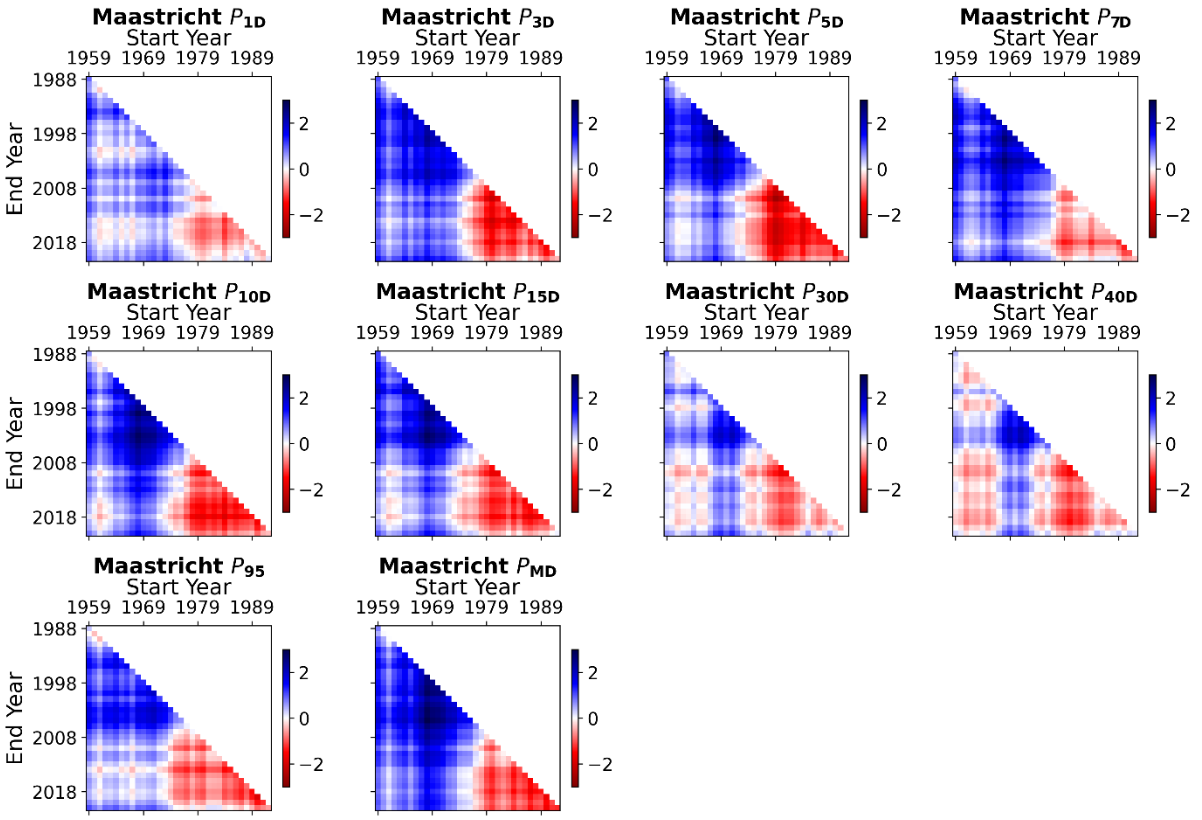

Figure S5. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Maastricht for winter half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

S2.2 Summer half-year

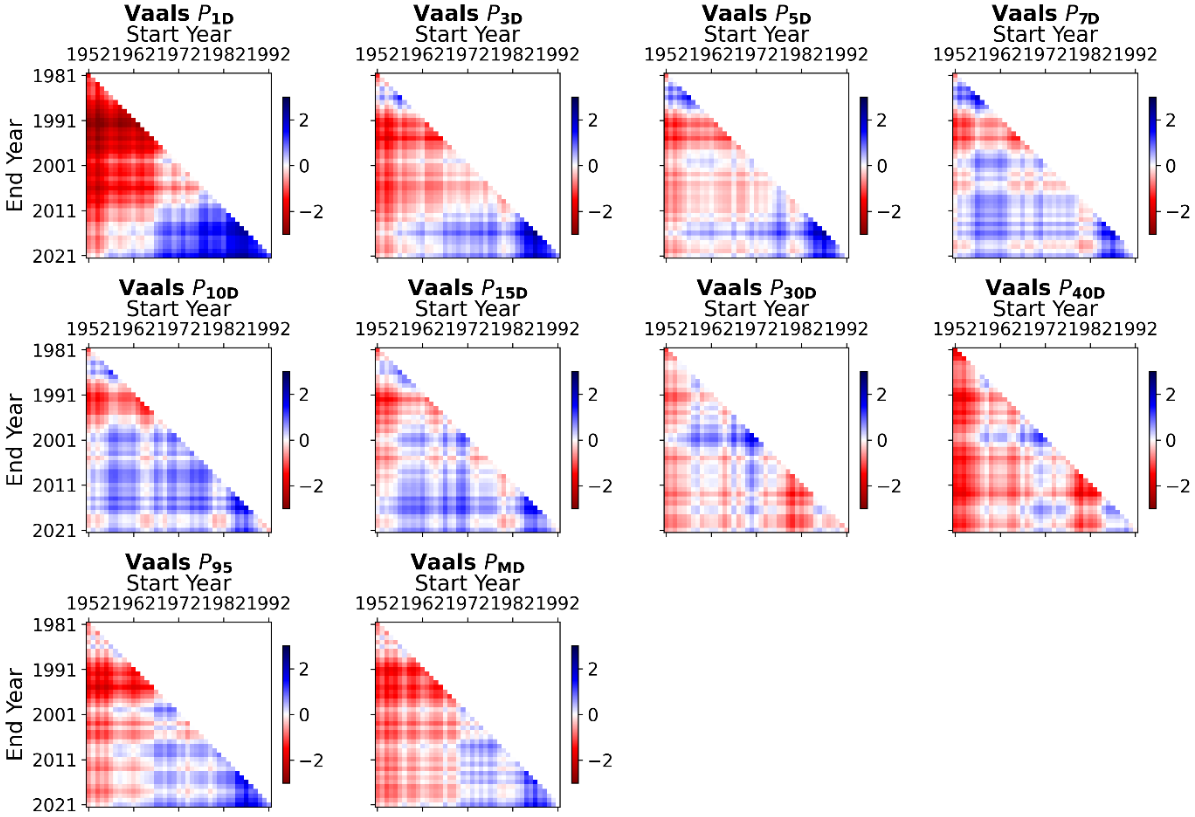

Figure S6. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Vaals for summer half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

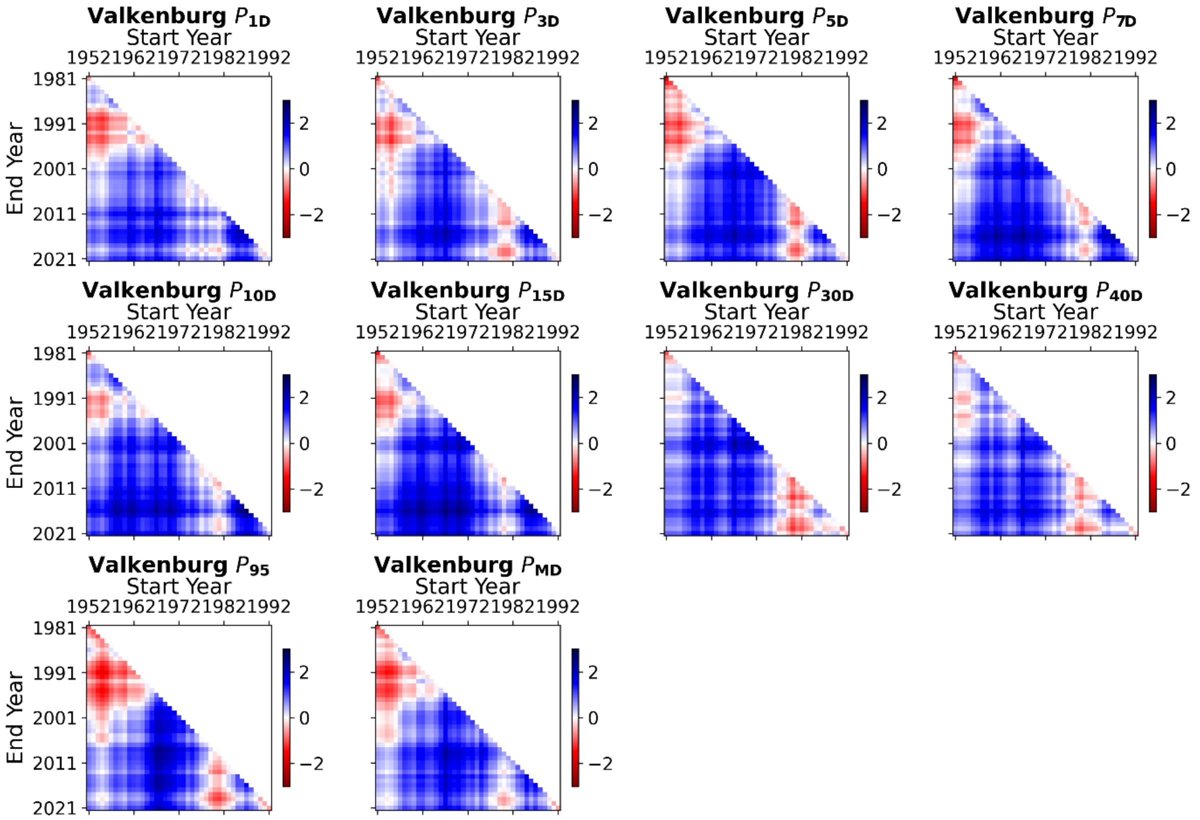

Figure S7. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Valkenburg for summer half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

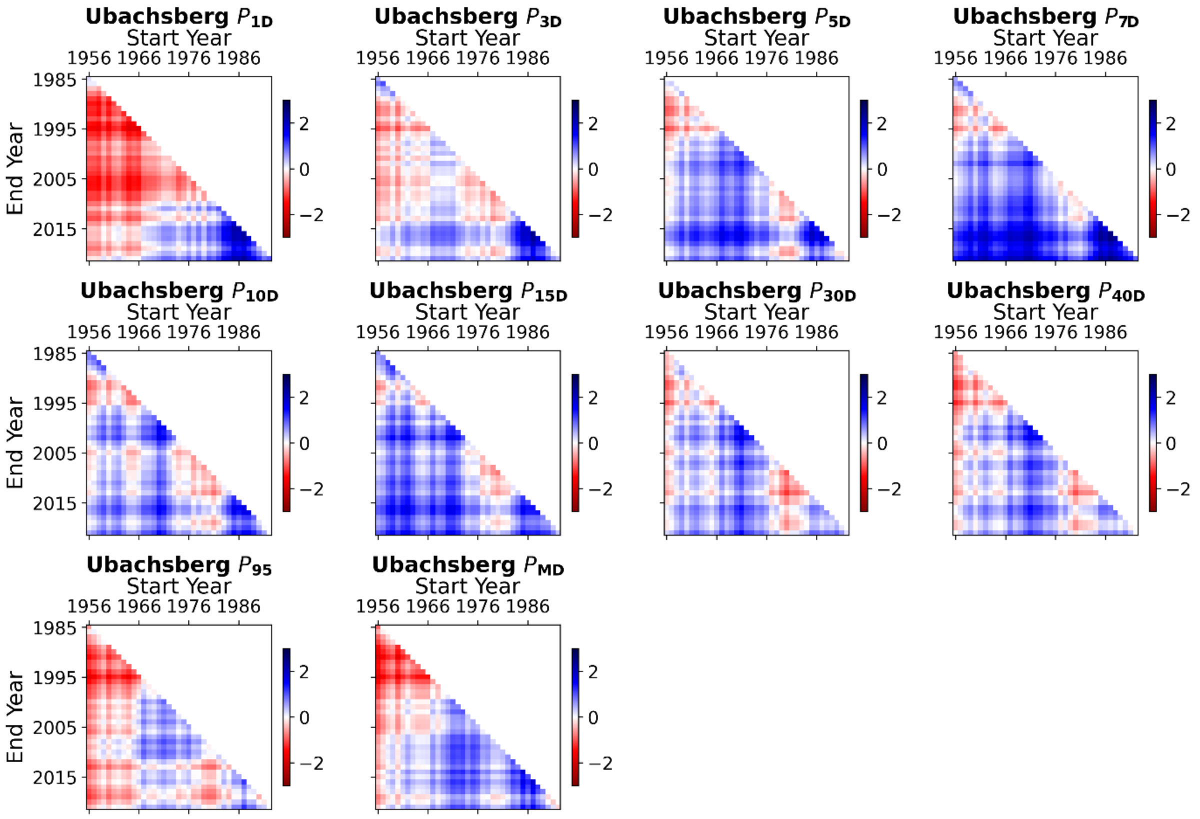

Figure S8. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Ubachsberg for summer half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

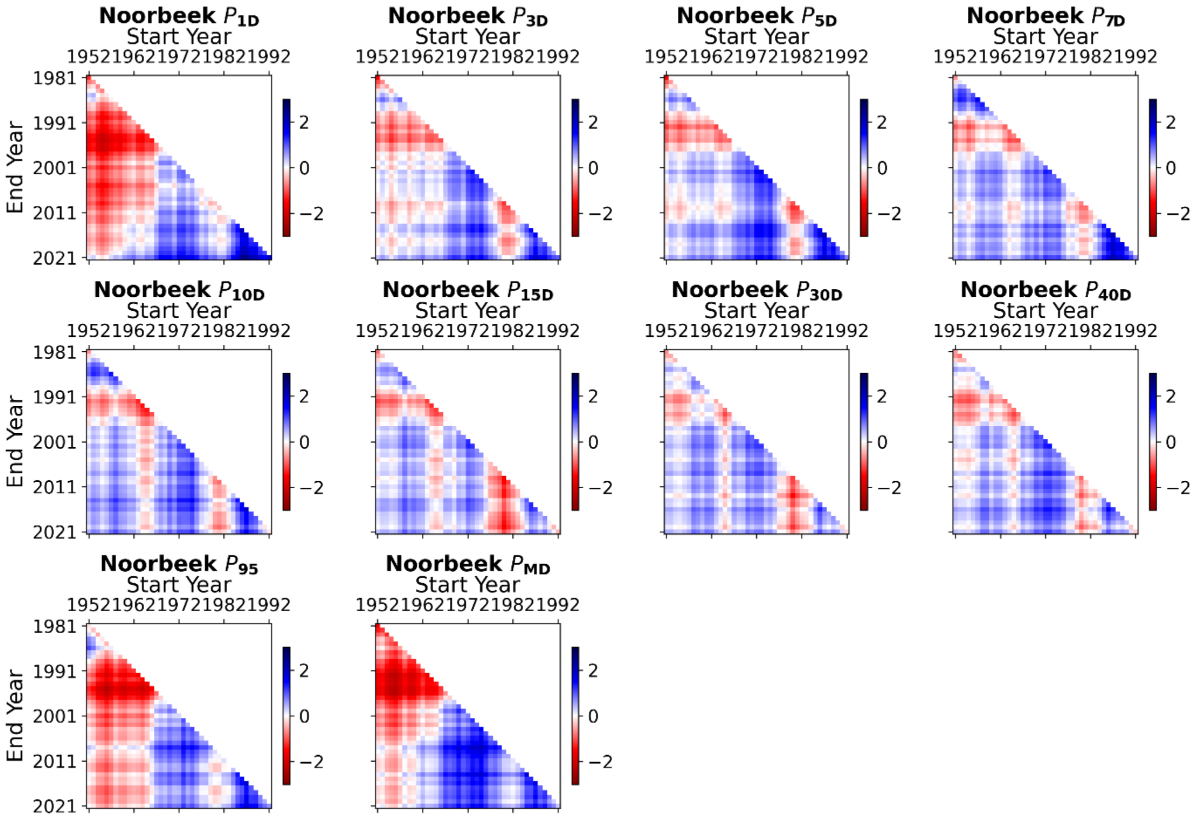

Figure S9. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Noorbeek for summer half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.

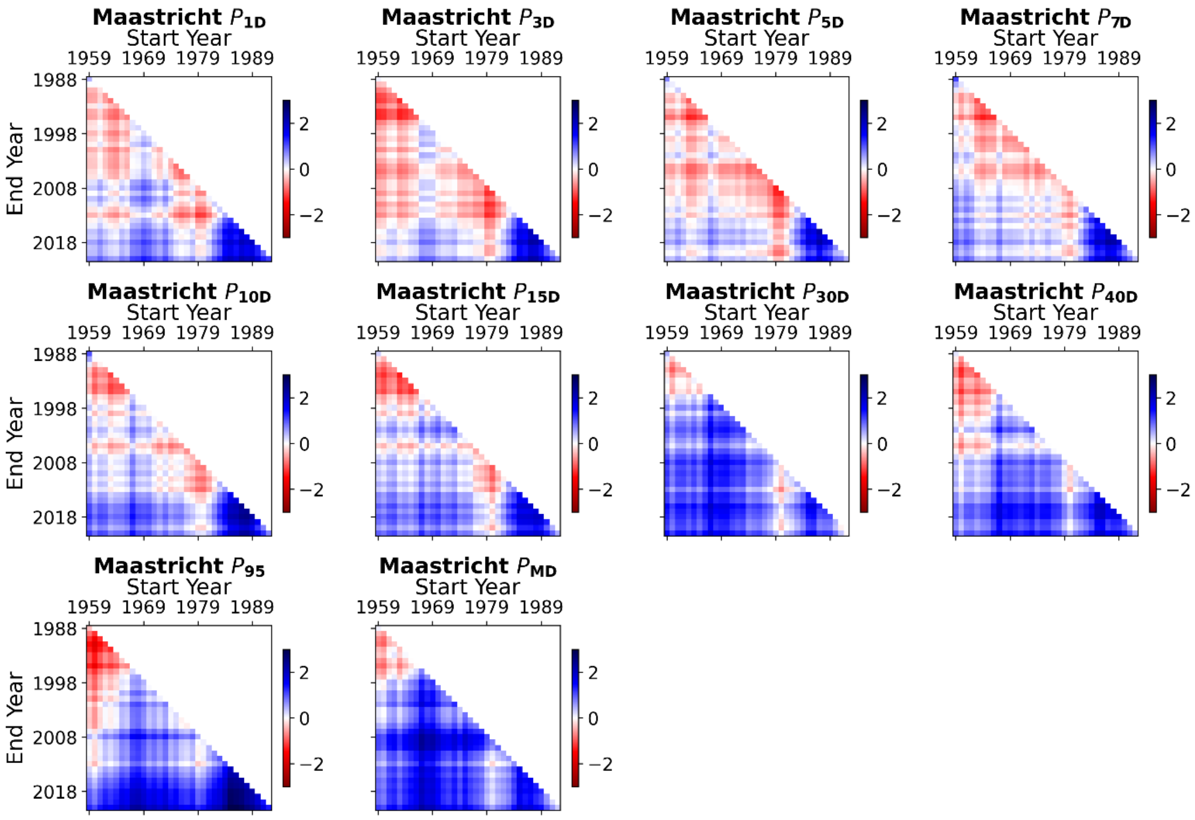

Figure S10. Multi-temporal trend analysis for the developed (extreme) precipitation indices at Maastricht for summer half-year. Each pixel presents a fixed period, and the color indicates the resulted Z-statistic value using the Mann-Kendall test.