



The intermittent nature of precipitation: new insights based on high-resolution rain gauge data for the United States and Europe

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Precipitation displays a remarkable variability in space and time. An important yet still poorly documented aspect of this variability is intermittency. Intermittency limits water resources in space and time and directly affects stream flow, surface runoff, infiltration, soil moisture and vegetation cover. It is characteristic of the local climatology and topography and strongly varies depending on the dominant synoptic conditions. In this presentation, the authors introduce a new diagnosis tool based on burstiness (B) and memory (M) of inter-amount times that can be used to quantify and compare intermittency patterns at different scales and levels of activity. The tool is applied to high-resolution data from 325 rain gauges at various locations in the United States and Europe and used to identify regions with increased risks of droughts, floods and landslides.