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A communication issue: Extremes - they have a will of their own!

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The incentive for this presentation is the growing demand of information on climate extremes, particularly in the context of adaptation, decision making and climate products.

The analysis of climate extremes requires re-thinking of approaches that are familiar from the description of the mean state of the atmosphere. This has major repercussions on the need to communicate background information to the above-mentioned user communities. An essential aspect is the „degree of extremity", i.e. the level of scarcity or out-of-the-ordinaryness for which the analysis is carried out. It has to be balanced by the need for information which form a knowledge base for decisions that is as robust/reliable as possible. One commonly used strategy involves the definition thresholds to separate the ordinary from the exceptional, such as, e.g., the maximum temperature surpassing 30°C (hot day) or using other thresholds/indicators. Clearly, there is a trade-off in comparability if the analysis area has a complex orography or if different climate regimes are analyzed concerning the frequency of surpassing that threshold. The alternative strategy employs a metric that is adjusted to the individual value ranges that occurs at each station or grid point. This leads to the introduction of so-called quantiles which represent fractions of the value range, e.g., the P95 quantile that separates the „upper 5 per cent" of a value range from the „lower 95 per cent". Clearly, the quantiles assume different values of the meteorological parameter, according to the height/location/exposure of a point at which it is determined. On the other hand, they approach a uniform concept of the „degree of extremity".

The above considerations lead to additional thought and caution when it comes to communicate, e.g., areal distributions of extremes, in particular when future develoments of extremes are considered. The presentation will focus on the advantages, limitations and pitfalls of evidence in conjuction with extremes and aims at improving the grasp of this complex concept.