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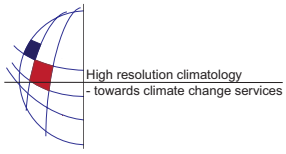

Trans Weather Patterns – an extended outlook for the future climate

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In order to apply the statistical regionalization model WETTREG, the determination of relations between large scale atmospheric patterns and local weather elements is required. So far a ”learning set” was used which included only patters as they appear in the present. In an extension of the method, additional patterns are proposed which develop only rarely or not at all in the current climate but gain more and more importance in the future.

The first stage of the study focused on situations - simulated by the global model ECHAM5 - that exhibit only very little resemblance to those known from the present. In this isolated subset, emergent structures, so-called trans weather patterns, were identified. They are connected by particularly large temperature anomalies and little humidity. They are emerging in particular during the summer months.

For the second stage of the study, the WETTREG model itself is extended. The frequencies of the patterns as they are known so far are applied in conjunction with the trans weather patterns. They are used as steering factors for the synthesizing of time series that bear the signature of a changed climate. Results from a recent study are presented. They include high resolution climate signals with the extended method.

As it turns out, this refined concept of the atmospheric patterns has a clear influence, i.e. on the mganitude of temperature signals.