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Possible Changes in Frequency and Intensity of Vb Cyclones

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In recent years, Europe was hit by a number of severe flooding events, causing enormous damages, the most prominent one being the Elbe 2002 flooding.

Many of these events took place in summer and have been caused by a cyclone following the prominent Vb track. A Vb-track situation is characterized by a cyclone system travelling from the Mediterranean Sea northeastwards to central Europe. The Vb cyclones have a rather high potential for extreme precipitation due to: advection of humid and warm air, frontal uplift and airflow up the northern slopes of the mountains.

Therefore this study focuses on the detection of Vb type cyclones and the estimation of their frequency and intensity characteristics in a long-time regional climate simulation for the period 1900-2100.

Three IPCC SRES scenarios force the simulated future of European climate:

- A1B “moderate” Global Warming scenario
- B1 “more optimistic” Global Warming scenario and a
- A2 “more pessimistic” Global Warming scenario

These scenarios are used, in order to examine a climatic change of the Vb cyclones.