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The influence of the circulation on surface temperature and precipitation patterns over Europe

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Abstract. The atmospheric circulation clearly has an important influence on variations in surface temperature and precipitation. In this study we illustrate the spatial patterns of variation that occur for the principal circulation patterns across Europe in the standard four seasons. We use an existing classification scheme of surface pressure patterns, with the aim of considering whether the patterns of influence of specific weather types have changed over the course of the 20th century. We consider whether the long-term warming across Europe is associated with more favourable weather types or related to warming within some of the weather types. The results indicate that the latter is occurring, but not all circulation types show warming. The study also illustrates that certain circulation types can lead to marked differences in temperature and/or precipitation for relatively closely positioned sites when the sites are located in areas of high relief or near coasts.

[Final Revised Paper](#) (PDF, 2446 KB) [Discussion Paper](#) (CPD) [EGS Hans Oeschger Medal 2002](#)

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