

LINKS BETWEEN CHANGES IN DAILY CIRCULATION TYPES AND LONG-TERM TEMPERATURE CHANGE IN EUROPE SINCE 1850

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ABSTRACT

Using a classification of daily circulation patterns developed within the EU-funded project EMULATE (European and North Atlantic daily to MULTidecadal climATE variability) the influence of circulation changes since 1850 on long--term temperature changes in Europe is investigated. Simple statistical models for simulating temperature purely based on daily circulation type frequencies can already explain a high amount of long-term temperature changes in winter and autumn and notable fractions in spring and summer. Relevant factors which allow for enhanced statistical models are investigated in order to improve the understanding of the link between circulation and surface air temperature on the long-term scale.