



Extremely Cold Winter Months in Europe (1951-2010)

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Abstract

Investigation of extreme thermal conditions is important from the perspective of global warming. Therefore, this study has been undertaken in order to determine the frequency, timing and spatial extent of extremely cold months in winter time at 60 weather stations across Europe over a sixty-year period from 1951 to 2010. Extremely cold months (ECMs) are defined as months in which the average air temperature is lower than the corresponding multi-annual average by at least 2 standard deviations. Half of all the ECMs occurred in the years 1951-1970 (33 out of 67). The lowest number of ECMs was recorded in the decade 1991-2000, but since the beginning of the 21st century, their density and territorial extent has started to increase again. The extremely cold months with ECMs of the greatest spatial extent, covering at least one third of the stations (over 20 stations), included: February 1954 (22), February 1956 (36), January 1963 (25), and January 1987 (23 stations).

Key words: extremes temperature, temperature anomaly, winter seasons, Europe.