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A late winter arctic temperature record

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In the afternoon of 29 March 2012, a temperature recording of 20.5 °C was made at Kvísker in Southeast-Iceland. This extreme event is analysed and described by a numerical simulation. The analysis of the event leads to identification of the following important characteristics

a) A warm airmass

b) A low level inversion and strong winds at mountain top level leading to an upstream blocking and yet strong downslope flow

c) Weak winds (<2 m/s) leading to a superadiabatic surface layer

d) Snow-free and dry soil for a low albedo and a high Bowen ratio

Some of the above situations are infrequent, such as dry soil in March and warm and strong foehn winds over the slopes in SE-Iceland, but calm at the same time at the weather station in question. The frequency of conditions for extreme events of this kind in future climate scenarios will be explored.