



A climatology of artificial snow production in Austria – New results

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In order to assess how meteorological boundary conditions for the production of artificial snow vary in time and space, we present a running trend analysis of wet-bulb temperature data of 14 Austrian stations located between 585 m a.s.l. and 3105 m a.s.l., back to 1948. We use the Mann-Kendall non parametric trend test in a continuous mode to capture the whole possible spectrum of significant trends on all timescales. To detect changes in the number of possible snowmaking days, a mean threshold value of wet-bulb temperature for artificial snowmaking is derived using state of the art technical characteristics of snowguns. The sensitivity of the applied method on the patterns of trend significance is described by different probability values p used for the analysis. The results show clear spatial and temporal inhomogeneities in the trend series. Beside strong regional differences, the altitudinal patterns demonstrate that medium elevated stations show more negative trends than low situated ones. This emphasizes the need to use in situ meteorological data when relating artificial snowmaking to climate change. Furthermore, typical micrometeorological phenomena such as e.g. the role of inversion layers under climate change conditions have to be considered as well.