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Summer Tourism in Austria and Climate Change

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EXTENDED ABSTRACT

Weather and climate as well as topographical and orographical conditions, vegetation and fauna play a prominent part in the assessment of tourism and leisure facilities. However, they are limiting and controlling factors, too. Therefore climate change will have considerable consequences on summer tourism in Austria. But of course additionally, several other factors for tourism play a significant role: starting from the weather conditions at home and the weather experience of the last holidays to the variety of activities, advertising campaigns and last but not least costs and prices. Some existing studies take into account all the influencing factors. In the present contribution the main issue was set on the variability of weather and climate conditions of specific destination areas and secondly on a subjective assessment of the climate sensitivity of different kind of holidays.

An analysis of relevant meteorological and climatological parameters for tourism climatology and human biometeorology is based on climate conditions for 1961 – 1990 and scenarios of the period 2021 - 2050 calculated by the Max-Planck-Institute for Meteorology in Hamburg. We used the A1B emission scenario.

The contribution is focussed on the thermal - bioclimate and on precipitation conditions, because these parameters represent the most important factors for tourism and recreation. Instead of the often used monthly average values, the frequencies of these parameters are calculated in the high temporal resolution of 10 days - each month is divided into three time intervals. To describe the thermal facet of the climate for tourism purposes we used the physiologically equivalent temperature PET, which considers the influence of the complete thermal environment (i.e. air temperature, air humidity, wind velocity as well as short and long-wave radiation) on humans. The frequency of certain PET classes quantifies thermal suitable conditions for leisure and recreation and gives information about cold and heat stress. Additionally the term „Sultriness“ is calculated with the classical criterion of the excess of a certain water vapour pressure.

For qualifying the aesthetic facet we used factors such as duration of sunshine, cloudiness and fog, range of visibility and day length. We integrated this aspect with the amount of cloudless or bright days as well as with the number of days with fog.

The factors high wind velocity and precipitation (days with few or no rain as well as long lasting precipitation events) specify the physical facet, which comprises influences such as wind, rain, snow conditions, air quality and extreme weather situations.

For Austria it can be expected that in the future (2021-2050) the summer tourism period will start earlier and end later in the year than now. The period for recreation and leisure will be extended, also the spring and fall months will offer comfortable thermal conditions for outdoor activities. However, this positive trend is opposed by an increase of frequency and intensity of heat stress and by an increase of days with sultriness in areas below 1000 m above sea level. It is also likely that there will occur a slight increase of days with longer rain events. The decrease of the amount of days with light or no rain will not be able to compensate that. The Climatic Tourism Information Scheme CTIS which we developed gives an overall view on the climatic conditions on a certain location and makes it also possible to compare the present situation with the future.