

THE THERMIC REGIME FROM BĂILE BOGHIȘ SPA AREA

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Abstract

The aim of this work is to analyze the time variations of the air temperature from Băile Boghiș spa area. In order to do this we have used air temperature related data from the weather station for a period of 11 years. The following have been analyzed: the annual average air temperature, the deviations of the annual average temperature from the multiannual average as well as the monthly course of the air temperature.

The multiannual average of the air temperature is of 9.4°C. Due to the moderating action of the surrounding peaks, the fluctuations of the annual average temperature are low, registering a value of 1.9°C. The monthly minimum is registered in January, when the temperature is of -1.3°C, and the maximum in July when it reaches 20.2°C.

In what Băile Boghiș spa area is concerned winters are in general moderate, without strong frostiness due to the western circulation and due to the fact that the spa is more sheltered from the invasions of the polar – continental air that come from east and from north-east.

Key words: temperature variations, monthly average, multiannual average, amplitude.

INTRODUCTION

Băile Boghiș spa is situated in the north-west part of Romania, in Sălaj county and administratively it belongs to Boghiș commune. Being situated on the valley of the spring bearing the same name, near the county road that connects Nușfalău and Boghiș, the spa presents a slight inclination towards the Barcău Valley. Nușfalău-Boghiș area, situated between Plopiș Mountains in the south-west and Meseș Mountains in the south-east comprises landforms specific to the hollowish intra mountain area of Șimleu, from which it belongs, with altitudes that vary between 180 m and 300 m (<http://www.baileboghis.ro>).

Due to the thermal mineral waters, to its picturesque settlement, to the landforms, to the wonderful views and to the gentle weather this spa has remarked itself as regional and local interest resort having a great afflux of tourists (<http://www.baileboghis.ro>).

MATERIAL AND METHOD

For the current work we have used air temperature related meteorological data from the Nușfalău weather station. This weather station has functioned until the year 2000, it has been situated in Nușfalău commune, at about 2 km away from Băile Boghiș. The meteorological data

related to the air temperature have been processed for a period of 11 years, more exactly for the interval 1990-2000.

RESULTS AND DISCUSSIONS

The annual average air temperature

In Băile Boghiș spa area, the multiannual average air temperature registers a value of 9.4°C.

For the studied period, the highest annual average value of the air temperature has been registered in 2000, the value being of 10.6°C, a close value being registered in 1994, that value being of 10.4°C. The lowest annual thermic value was of 8.7°C and it was registered in the years 1991 and 1996 respectively (Figure 1). According to these data the fluctuations of the annual average temperature are low, of 1.9°C respectively, a value which results from the difference between the highest annual average temperature (10.6°C in 2000) and the lowest annual average temperature (8.7°C in 1991 and in 1996) from the above mentioned time interval. This value is explained through the moderating action of the surrounding peaks (Gaceu, 2005).

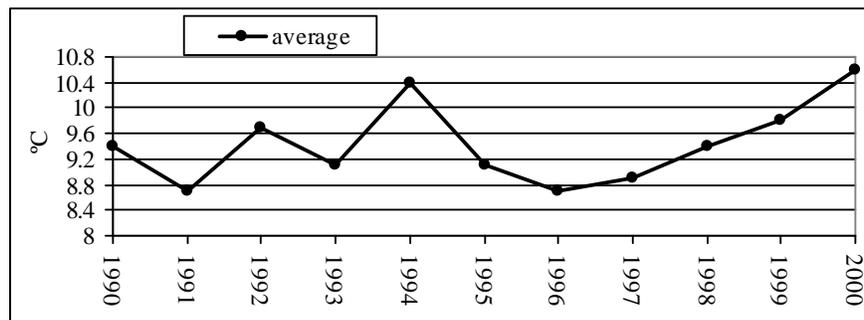


Fig. 1. The evolution of the annual average temperature in Băile Boghiș

Values higher than the multi annual average (9.4°C) have been registered in 36.4% of the years taken into consideration for the current study, the value of the deviations varying between 0.3°C and 1.2°C, and the maximum value of the positive deviations being registered in 2000 and the lowest one in 1992.

The years with negative thermic deviations have been a majority, representing 45.4% from the cases and the value of the negative deviations varied between -0.3°C și -0.7°C. The maximum value of the negative deviation has been registered in 1991 and in 1996 (the annual average has been of 8.7°C), and the minimum one in the years 1993 and 1995 (with an annual average of 9.1°C). It is to be noticed that in the years 1990 and 1998

the value of the annual average temperature has been equal with the multi annual average, with 9.4°C respectively. Those two years represent 18.2% from the cases in which there were no deviations from the multi annual average (9.4°C).

The monthly average air temperature

The monthly minimum value of the air temperature in Băile Boghiş is registered in January with a value of -1.3°C, and the maximum value in July when it reaches 20.2°C, resulting a monthly amplitude of 21.5°C (Figure 2). During winter the average temperature values are negative; in December and in February in comparison with January, the temperature values are higher with 0.7°C și 1.2°C respectively, this being due to an intense cyclone circulation.

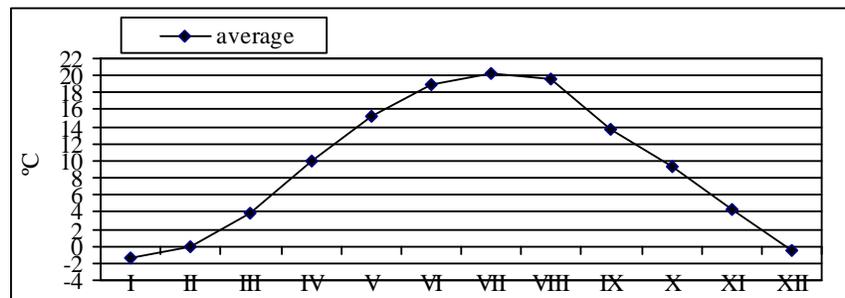


Fig. 2. The monthly course of air temperature in Băile Boghiş

During summer the air temperature is higher than in Borod and lower than in Oradea. Thus, while in Băile Boghiş the average of July is of 20.2°C due to the influence of air masses from the west and due to the altitude of the landforms, in Borod the temperature of the same month is of 19.2°C, and in Oradea the temperature is of 20.9°C (Moza, 2009).

During fall, starting with September the temperature drops all of a sudden, the multi annual average values of these months varying between 13.8°C in September and 4.3°C in November. This cooling of the air temperature is due to the intensification of air cooling through radiative processes and through the increase of the cold air advection under the action of the Siberian anti cyclone (Măhăra, 2001).

CONCLUSIONS

Thermic values higher than the multiannual average (9.4°C) have been registered in 36.4% from the years studied and lower values appeared in 45.4% cases. The monthly average temperature has got a normal yearly course with more obvious thermic differences during the transition seasons

(11°C) and more reduced differences during the summer and the winter months (1 – 2°C).

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