THE MULTIANUAL AVERAGE RULE OF ATMOSPHERIC PRECIPITATIONS IN BANAT

REGIMUL MEDIU MULTIANUAL AL PRECIPITAȚIILOR ATMOSFERICE DIN BANAT

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Abstract: *The characteristics of the general circulation of the atmosphere and the specific features of the structure of the land active surface are the fundamental causes that determines the regime and teritorial distribution of the rainfalls. Their very complex genesis and in interdependence with the natural varied frame of Banat causes the big differences of their distribution on verticality depending on altitude, display of slopes and the existence of the positive and negative forms of relief.*

Rezumat: *Caracteristicile circulaţiei generale a atmosferei şi particularităţile structurii suprafeţei active terestre sunt cauzele fundamentale care determină regimul şi repartiţia teritorială a precipitaţiilor. Geneza lor foarte complexă şi în interdependenţă cu cadrul natural variat al Banatulu ,determină marile diferenţieri ale repartiţiei lor pe verticală, în funcţie de altitudine, expunerea versanţilor şi existenţa formelor pozitive sau negative de relief.*

Key words: *rainfalls, the oceanic and Mediterranean cyclones, pluviometric station, rainfall frequency.*
Cuvinte cheie: *precipitaţii, cicloni oceanicei şi mediteraneeni, staţie pluviometrica, frecvemţa precipitaţiilor*

INTRODUCTION

The atmospheric rainfalls present a great variability as well as in time and space being dependent on the obscurity regime.

The day-time regime of the rainfalls are characterized by a double oscillation with a maximum of radiation in the morning and with a second maximum of convection in the afternoon. Between them there is an installation of a main minimum after midnight and a secondary on before noon. At medium latitudes this daily running is disturbed by the presence of cloudy systems and frontal rainfalls which have an irregular running.

The yearly regime shows the way of distribution of the rainfalls in different periods of the year. Depending on the genetic factors, the yearly medium rainfalls are uniformly distributed in the territory, conditioned by altitude and forms of relief.

MATERIALS AND METHOD

The smallest medium yearly quantities in plain counties are found in the North-West Part of Banat, in the Torontalului Plain, being under 600mm. At Beba Veche, the westest point in Romania, they recorded the smallest value, 521.0mm, then the quantities increase towards East and South, as a result of the altitude increase and of the undermediteranian influences: 530.3 at Periam, 541.4 at Sannicolaul Mare, 552.3mm at Teremia Mare. In the Timisului Plain, the annual average varies between 544.0mm at Ortisoara and 690.7mm at Lugoj (table no.7)

In comparison with the plain region from South and South-East of the country, the annual averages are reduced to 600mm, in the western part, to 450mm in the Baragan plain, while the influence of the oceanic and Mediterranean cyclones falls down and increases the East-European anticyclone influence, and the rainfalls are of frontal and convective type.

Unlike this, in the Banatului Plain, yearly fall dawn between 520mm in West and almost 700mm in East, the rainfalls usually being of frontal type, caused by the activity of the oceanic and Mediterranean cyclones.

RESULTS AND DISCUSSION

In the hill regions, the average multiannual quantity oscillates between 629.6mm (Bunea Mare) and 864.9 mm(Hăuzesti) we must notice quantities over 800mm constantly to be found in the Tirol Hills and those of Oravita: 815.3mm at Sasca Montana and 842.0 mm at Oravita. All the depressions stations and the Danube gorge , the quantities are between 631.9mm (Bozovici) and 932.4mm (Borlova).

The quantities of rainfalls in the cold term are distributed as it follows: in the plain 176.5mm (Beba Veche) and 241.3mm (Lugoj), in the hill regions and depressions they increase from 211.3mm (Visag) to 301.5mm (Borlova) being higher in the mountains: 266.7 mm at Tarcu Peak, 283.0mm Cuntu, 327.6mm at Semenic and 419.0mm at Rusca Montana.

Table 1

The multianual average in meteorological station Timisoara in period 2006

Month	T(0C) 2006	P(l/m2)2006
I	-2.0	30.0
II	0.0	42.0
III	5.0	49.0
IV	12.0	79.0
V	16.0	50.0
VI	20.0	88.0
VII	24.0	50.0
VIII	20.0	98.0
IX	18.0	25.0
X	12.0	17.0
XI	6.0	31.0
XII	2.0	21.0

Table2

The multianual average in meteorological station Timisoara in period 2007

Month	T(0C) 2007	P(l/m2) 2007	R(%)
I	0.1	22.0	78
II	4.2	86.0	76
III	10.6	53.0	67
IV	14.9	62.0	52
V	23.0	65.0	64
VI	24.1	46.0	63
VII	22.5	65.0	53
VIII	18.3	69.0	63
IX	13.0	4.0	72
X	9.0	57.0	78
XI	6.0	92.0	81
XII	4.0	26.0	84

The mountain regions naturally benefit of the highest quantities of rainfall, exceeding 600mm. At the pluviometric station Bigar, there was calculated the smallest value 688.8 and at the Semenic meteorological station, the biggest 1169.7mm. High values were found at Valiug too, (1059.2mm), Rusca Montana (1136.3mm), Cuntu (1053.5mm). But at the meteorological station Tarcu Peak (altitude 2180m), the annual average quantity is only 943.1mm. These differences can be explained by a different position from the advection of the air masses from West and South-West. The meteorological station from Semenic and the pluviometric station Valiug and Rusca Montana are situated on the westic slope of the Semenic Mountains and Poiana Ruscai, where the climbing up of the humid air masses from West and South West favourise the intensification and increase of the rainfall frequency.

The calculation of the annual quantity frequency of rainfalls which took place in 50 years of observations shows that, in Banat, these can vary from at less than 550mm to over 1150mm. The most frequent annual quantities of rainfalls are those between 600 to 700mm, representing 41% from the number of cases taken into consideration.

The quantities between 500 and 600mm are recorded in a proportion of 18% of cases. At limits between 700 and 800mm and 900 and 1000mm there are values of 12%, and the least cases with limits 800-900mm were 8% and those bigger than 1000 too. A calculation of the annual average of rainfalls for Banat would exceed very little the value of 700mm (718.4mm).

More spread are the values at the meteorological stations and pluviometric ones situated at an altitude of 300-900mm where the annual average quantities oscillate between 800-1000mm. At heights over 1000m the dispersive of the values is more stressed, showing the interdependence of rainfalls-altitude which is not simple and unconditioned because other factors interfere too, such as: the display of the slopes, the degree of covering the vegetation.

CONCLUSIONS

The following conclusions can be drawn:

1. The increase of the annual average quantities together with that of the altitude according to some known compulsoriness.

2. The existence of the condensation level, which in the Banatului Mountains is 1200-1400m altitude, a fact that explains a higher value of the rainfalls average at Semenic Station, altitude 1447m compared to that of Cuntu, altitude 1450m and Tarcu Peak, altitude 2180m.

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