

GENERAL CLIMATIC CHARACTERISTICS OF OHRID REGION

INTRODUCTION

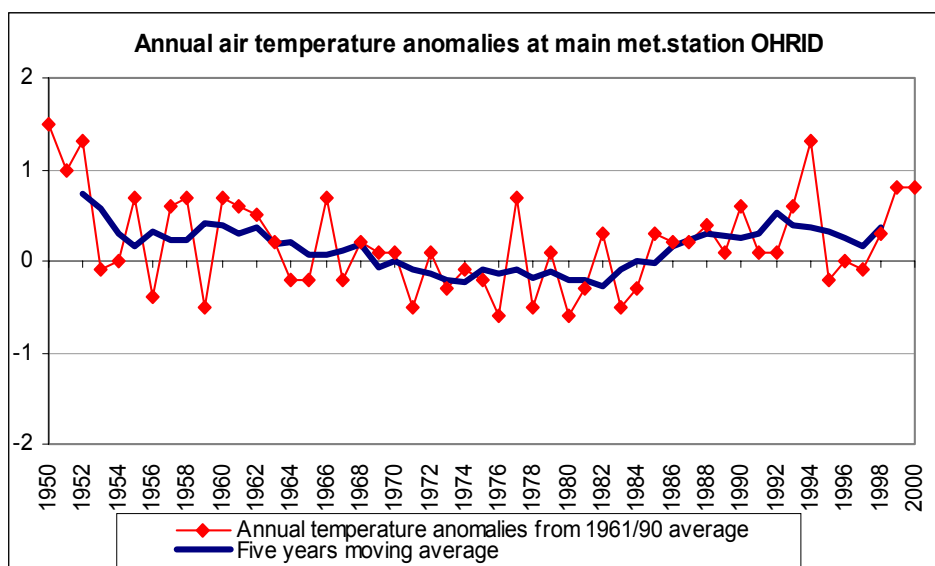
Climate of some region is determined as a synthesis of weather types for determined period of time in which mean and extreme values of meteorological elements and phenomena are determined and that climate depends on circulation, solar, geographic and anthropological factors.

As a result of geographic location, closeness of Adriatic Sea and existence of orographic barriers the climate of Ohrid Lake basin is mostly determined by Mediterranean influences (from south), as well as continental ones (from north). Specific climatic characteristics of Ohrid region are significantly conditioned by the influence of Ohrid Lake which appears as a climatic modifier.

In the further text a short review of statistically processed values of main meteorological elements for standard climatological period 1961-1990 is done. Data refer to the measurements of main meteorological station Ohrid (Hs=760m, $\varphi=41^{\circ} 07'$, $\lambda=20^{\circ}48'$) at which the professional observers perform 24-hours continuous measurements, then climatological station Struga (Hs=695, $\varphi=41^{\circ}11'$, $\lambda=20^{\circ}41'$) at which the measurements are performed in three climatological terms, and precipitation stations Sveti Naum, Pestani, Meseista, Radolista, Vevcani and Slivovo at which daily measurements of precipitation quantity and type are done.

AIR TEMPERATURE

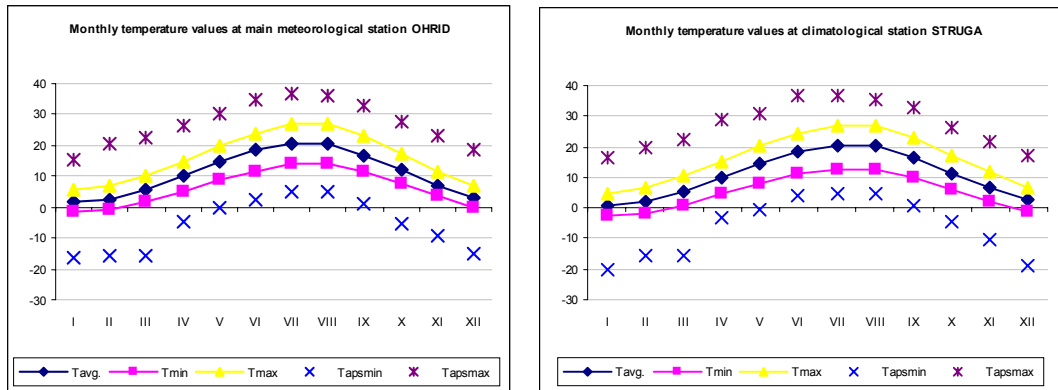
Thermic regime of Ohrid region is specific and conditioned by the heat capacity of the lake and its thermoregulatory influence which is especially felt in winter months and in direct coastal area.



By the data analysis 1950-2000 it is evident that since 1985 exceptions of mean annual value of air temperature in regard to standard average 1961-1990 show positive values, that means increase of mean annual temperatures for 0.5-1.0°C in the last decades.

Average mean annual air temperature in Ohrid valley is 10.7°C in Struga, and 11.1°C in Ohrid. The highest mean monthly values are in July and August, and the lowest values are in January, noting that they have positive values.

In regard to the greater elevation the greater amplitudes in mean monthly temperatures should be expected, but because of the lake influence the temperature is 19.0°C.



Mean monthly maximum temperatures are between 27°C in August and 5.4°C in January in Ohrid, and 26.9 °C in July and 5.0 °C in January in Struga. Many years measurements in Ohrid and Struga have shown that air temperature values for 30 year period have not exceeded absolute maximum of 36.7 °C and absolute minimum of -20.0 °C.

PRECIPITATION

In regard to precipitation arrangement the region belongs to Mediterranean pluviometric regime which is characterized by main maximum of monthly sum of precipitation in November and December, and secondary maximum in late spring, that is in May. The main minimum of precipitation is in July and August.

Annual sums of precipitation in Ohrid region are between 703.1 mm in Ohrid and 1194.0 in Vevcani. Monthly sums of the most precipitative months - November are 94.6 in Ohrid to 162.6 in Vevcani, and December from 83.9 in Pestani to 154.5 in Vevcani. By the monthly precipitation patterns it can be seen that the winter period has in abundance the most precipitation, and quantities which are over 50% of total annual sum.

Average annual sum of precipitation in (mm)

Ohrid	Struga	Sv.Naum	Radolista	Pestani	Meseista	Vevcani	Slivovo
703,1	793,9	888,6	1048,0	728,9	913,3	1194,0	954,6

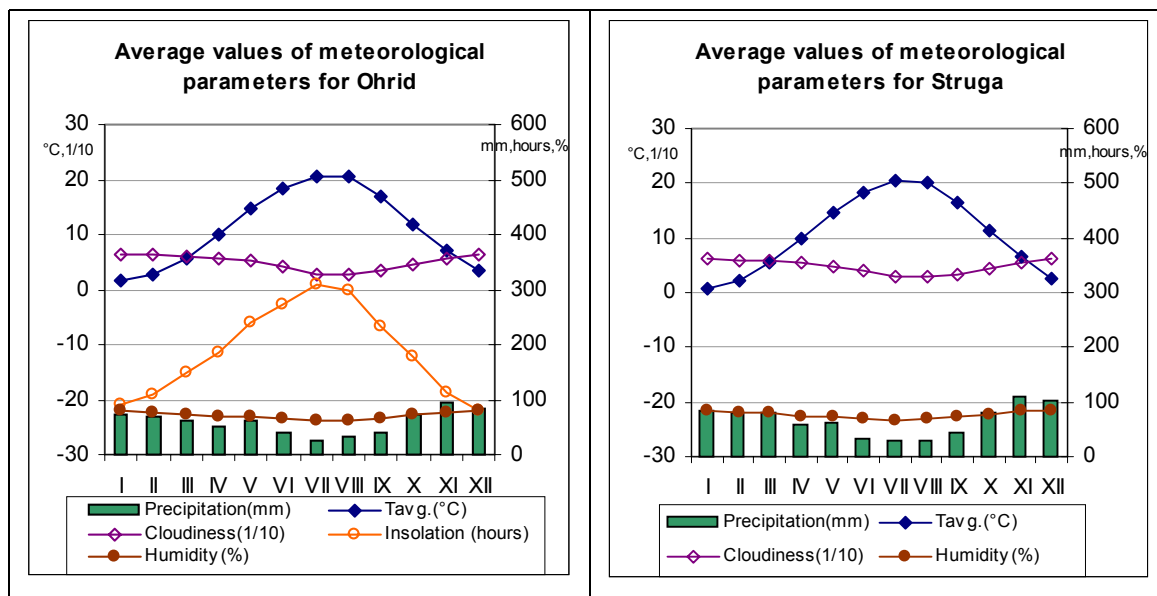
As a result of configuration of the terrain, as well as influence of mentioned factors, number of precipitative days and quantity of precipitation are expressively changeable in space and time and have tendency of increasing not only by increasing of elevation but in the direction south-north, that is by removing from the lake surface.

Detailed investigation of pluviometric regime cause increasing of number of measuring points, as well as their even arrangement in vertical direction.

RELATIVE HUMIDITY, INSOLATION AND CLOUDINESS

Relative humidity in Ohrid region comes under the regime of conduct of relative humidity of temperate latitude, which means that in the annual passage, maximum of relative humidity (79% for Ohrid and 83% for Struga) appears in the coldest months and by stabilization of weather conditions towards July and August relative humidity decreases and reaches the minimum (61% for Ohrid and 67% for Struga) in the hottest months. Average annual relative humidity in Ohrid is 70%, and in Struga 76%.

Annual sum of duration of solar radiation is 2257 hours. Monthly sum of insolation gradually increases from spring toward summer reaching the maximum in July (309,4 hours), and then it decreases toward autumn and winter reaching its minimum in December (78.5 hours).



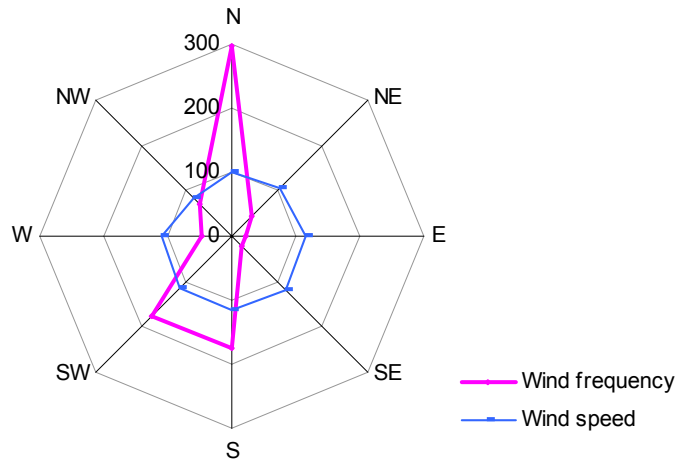
Cloudiness in its annual passage coincides with the annual passage of relative humidity, and in opposite passage with insolation. Annual mean value of cloudiness quantity in tens is 5.0 in Ohrid, that is 4.7 in Struga, with maximum values in January and December 6.5 in Ohrid and 6.2 in Struga and minimum 2.7 in Ohrid and 2.8 in Struga in July.

WIND DIRECTION AND SPEED

Ohrid-Struga region is characterized by special wind regime conditioned by presence of lake surface. Beside the winds which appear as a result of atmospheric circulation, there are also local winds arisen from unequal heating of land and water. In regard to natural geographic location, it is normal dominant flows in the direction north-south to be expected.

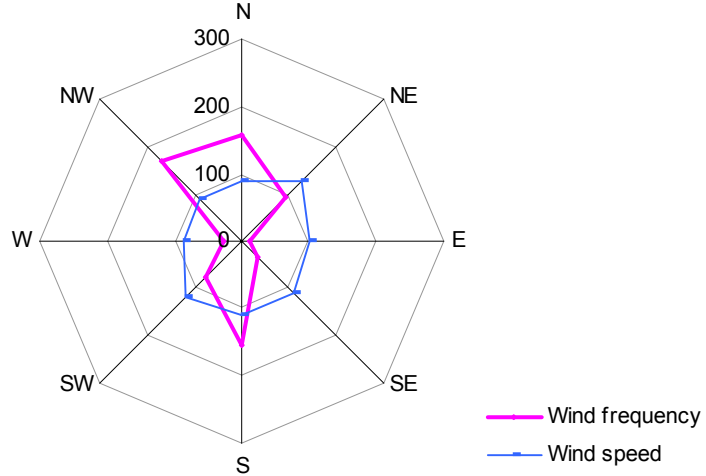
Winds from the north (297‰) and south-west and south direction (179 and 176‰) have the greatest frequency and they are registered in Ohrid, and north-west, west and south direction (169, 157 and 155‰) in Struga as well. It is represented at the graphic of frequencies of directions and mean speeds by directions in the enclosed wind roses for Ohrid and Struga.

Average annual wind speed (in m/s) and wind frequency (in %) for OHRID



	N	NE	E	SE	S	SW	W	NW	C
Wind frequency	297	43	23	23	176	179	48	73	138
Wind speed	2,0	2,1	2,3	2,4	2,3	2,3	2,2	1,7	/

Average annual wind speed (in m/s) and wind frequency (in %) for STRUGA



	N	NE	E	SE	S	SW	W	NW	C
Wind frequency	157	92	13	36	155	73	26	169	279
Wind speed	1,8	2,5	2,0	2,2	2,2	2,4	1,7	1,8	/