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Basic climatic data on a mode of thunderstorms in Kyrgyzstan

Objective:

- to obtain the basic characteristics of thunderstorms averaged on the territory of Kyrgyzstan, and its four climatic provinces (North, Northwest Kyrgyzstan, South-Western Kyrgyzstan, Issyk-Kul hollow and Inner Tien Shan)

Data used:

- data of 65 Kyrgyzhydromet meteostations from 1960 to 1991

Methodology :

- The annual frequency (number of cases) – x, the duration of individual thunderstorm - t, the integral number of hours with thunderstorm for a year - n were calculated. Average values ($\bar{x}$, $\bar{t}$, $\bar{n}$) and coefficients of variation (c(x), c(t), c(n)) were calculated for each characteristic. Correlation-regression relations and dependences of average values from elevation (z), latitude (φ) and longitude (λ) of the meteostations were estimated.

Issyk-Kul hollow (IKH)

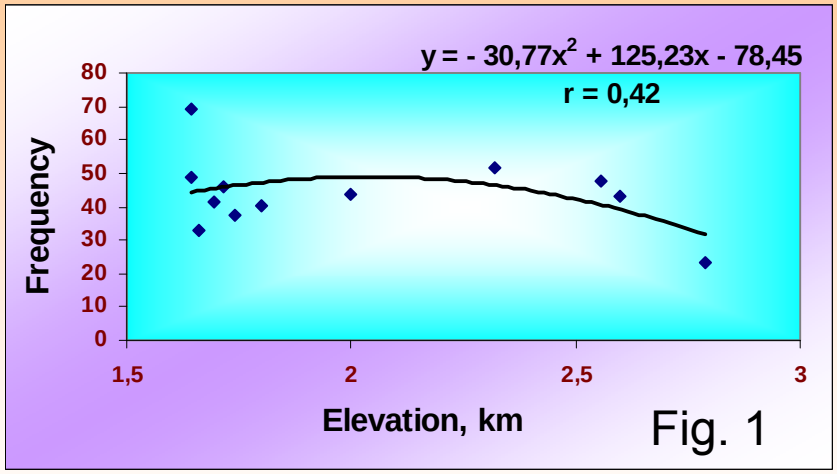
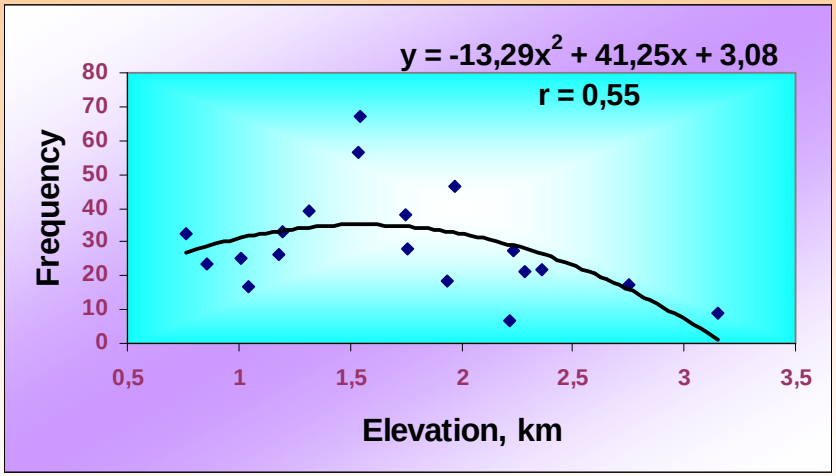


Fig. 1

In this region the maximum number of thunderstorms (44) and integral number of hours with thunderstorm (52) for a year was registered. The duration of an individual thunderstorm is 1,2 hour.

Fig. shows the graph of dependence of average number of thunderstorms from elevation. The correlation coefficient equals 0,42. From this graph it follows that maximum frequency of thunderstorms is on altitude 2 km.

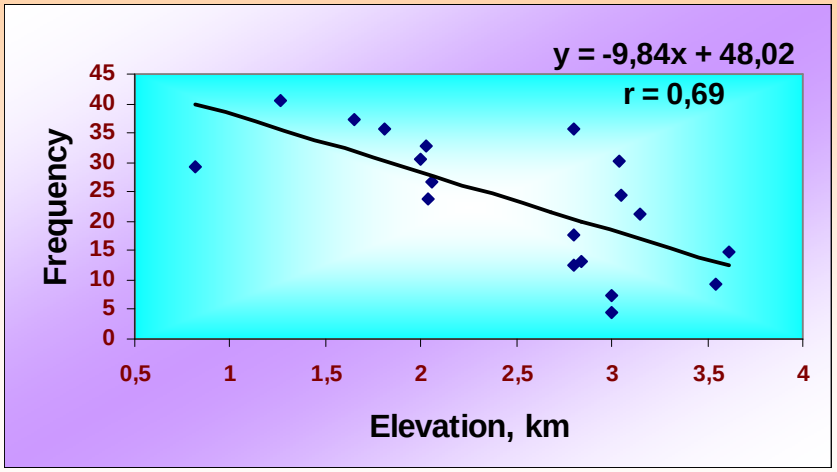
South-Western Kyrgyzstan (SWK)



SWK ranks the second place according to thunderstorm activity. The number of thunderstorms is 29 and the integral number of hours with thunderstorm is 45 for a year. The duration of an individual thunderstorm is 1,4 hour.

The dependence of average number of thunderstorms from elevation is more expressed in this region. The correlation coefficient equals 0,55. The maximum frequency of thunderstorms is on altitude1,5 km.

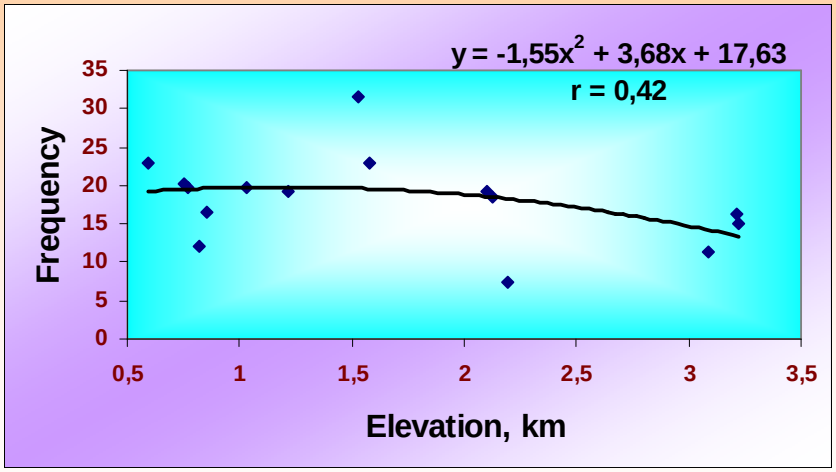
Inner Tien Shan (ITS)



In this region the number of thunderstorms is 24 and the integral number of hours with thunderstorm is 26 for a year. The duration of an individual thunderstorm is 1 hour.

The dependence of average number of thunderstorms from elevation is linear. The correlation coefficient equals 0,69, the maximum frequency of thunderstorms is on altitude around 1 km.

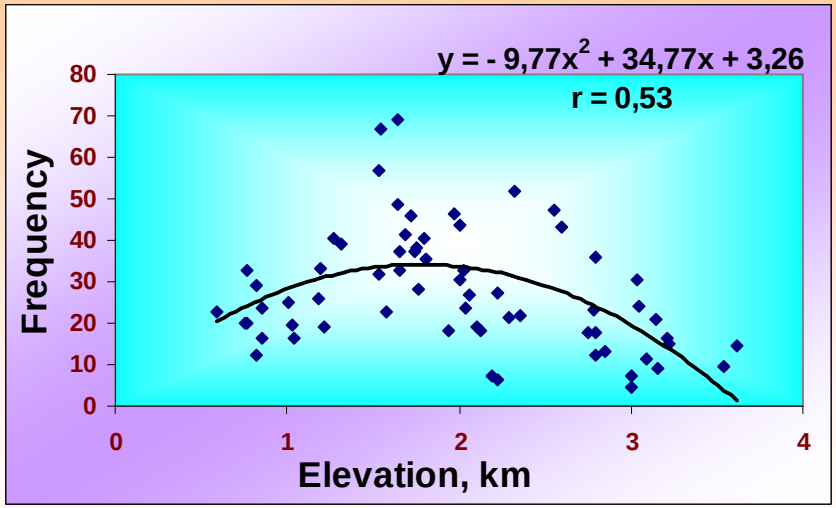
North, Northwest Kyrgyzstan (NNK)

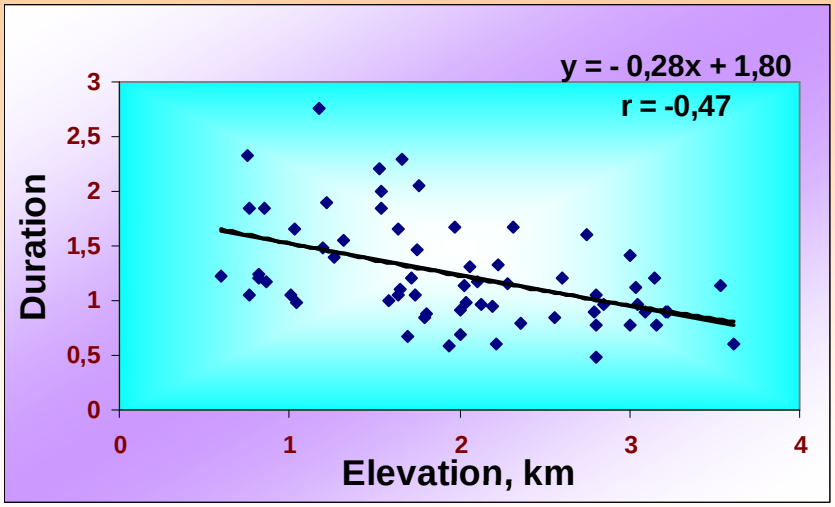


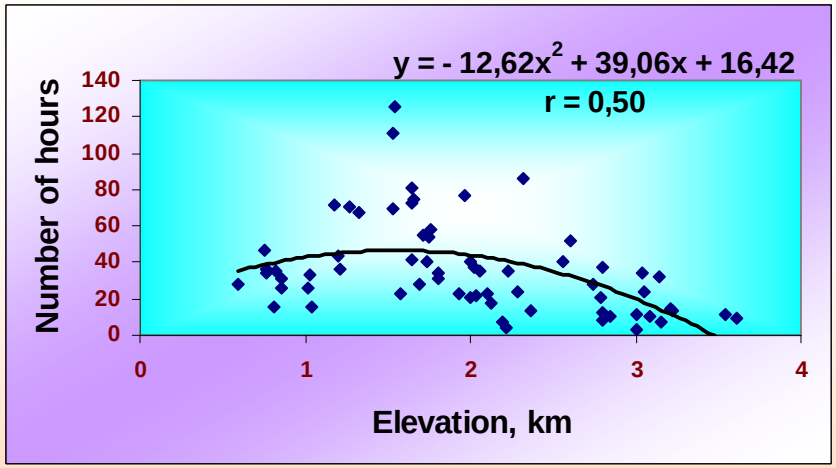
For this territory the number of thunderstorms is 18 and the integral number of hours with thunderstorm is 27. The duration of an individual thunderstorm is 1,4 hour.

The correlation coefficient equals 0,42 and the maximum frequency of thunderstorms is on altitude around 1 km.

All territory of the Kyrgyzstan







For the territory of Kyrgyzstan on average the number of thunderstorms is 28 and the integral number of hours with thunderstorm is 36 for a year. The duration of an individual thunderstorm is 1,2 hour.

The dependence from elevation for all these parameters exists. The correlation coefficients equal 0,53, - 0,47 and 0,5 accordingly. Figures show graphs and regression equations which have been received by me for the first time.

THANKS