

ABSTRACT

The goal of this thesis is to search available statistical methods, which can be used for tracking changes in runoff of rivers in mountain areas (but not exclusively there). One of the most commonly used methods is Mann-Kendall test. Next there is test of homogeneity of time series, which includes for example Pettitt test or Mann-Whitney test. To observe the changes we can also use different models. The thesis gives characteristics of the drainage area of the rivers Ala-Archa, Alamedina a Kara-Balta with focus on their runoff. Runoffs of their river Ala-Archa were studied in years 1928 - 2010. For river Alamedin, only years 1926 - 2010 were analyzed. And for river Kara-Balta, the time series is available only for period of 1927 - 1994.

Key words: runoff, statistical methods, mountain environment, Tian Shan, glacier-snow regime