

Some aspects of water stream velocity assessment in case of maximum discharges at Georgian rivers

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River stream movement velocity is a very diverse value, which is depended on river types, river bed contours, morphology and roughness of river bottom and riverbanks, wind strength and direction, water influx and reflux, freezing regime, water plant propagation and other factors.

For those rivers, which are characterized by high turbulence of water flow and vertical deformation of river bed, determination of water expenditure according to customary methods is very complicated, since precise measurement of velocities and depths is impossible. At the same time, calculation of maximum water discharges is important when designing bridges and hydraulic engineering structures. In order to establish discharges is necessary to conduct hydraulic calculations, namely to determine stream velocity and morphological characteristics of rivers stream cross section. Establishment of morphological characteristics of cross section is possible through topographic survey on-site, while average velocity of the stream is determined using Chezy formula, where Chezy coefficient plays important role. There are a lot of empiric formulas for calculation of this coefficient. Based on this fact we considered stream velocities on some Georgian rivers using mentioned empiric formulas, their positive and negative impacts are studied and appropriate recommendations are given.