

Assessment of risks of washout of separate sections of riverbanks and other related risks of various level

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Floods and mudflows in most cases are characterized by suddenness, and due to this fact during their rapid development becomes impossible to carry out corresponding measurement works in time. Besides they are distinguished by wide range of phenomena to be investigated (seasonal observations – once a year, while in case of catastrophic phenomena – once in the decade). When analyzing and assessing the washouts of separate sections of riverbanks and related risks of various level it is important to use the theory of probability, that is complicated due to lack of statistical data and, as a result, because of inadequacy of corresponding probability model to actual processes. Proceeding from the abovementioned significantly increases the role of assessment of parameters of investigated random processes, conducted by the methods, which take into account the limitation of initial statistical data. Along with point estimation of unknown parameters (assessment in one number) these methods allow us to determine what is the probability (confidence probability) of occurrence of one or another characteristic parameter of random process within the limits of some range of values (confidence interval). Solution of this problem for washout of separate sections of riverbanks is given in the presented work.

The probable values of maximum discharges have been determined (specified) for separate sections of Georgian rivers. For identification of related risks we have turned our attention to the so-called flood activity coefficient. Determination of flood activity coefficient and solution of virtual examples (cases) gave us an opportunity to identify river sections, which are the carriers of relatively high risk.