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Runoff Estimation by Regression Trees Method

The design and accomplishment of floodwater spreading systems have recently been expanded by research and executive organizations. With respect to the inadequacy of data about the designing standards of these systems, there will not be the opportunity to employ the project optimally if the basin area, the discharge value and the flood volume are not proportionate. The lack of proportion between the area of flood spreading basin and the deviated discharge leads to improper function of the design. On the one hand, there is a relation between the specifications of the basin soil, permeability, slope and required discharge value for a specific area of the basin (hydro module). There have not been presented any specific relation and recommendation for selecting basin area and required water volume for designing flood spreading basin. In this study, some stations with different soil characteristics and topography were selected to achieve relations for determining the required volume and discharge to design flood spreading systems. The given parameters were measured in the selected stations in a specific time period. In this study Classification trees are used to estimate the runoff.   The classification trees predict or explain responses on a categorical dependent variable much better than the techniques used in the more traditional methods. The relationship between flood discharged and other variables increases the correlation coefficient (R) from 0.797 to 0.917 by using linear regression and regression trees respectively.