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Estimation of the Curve Number and Runoff Height Using the Arc CN-Runoff Tool in Sartang Ramon Watershed in Iran

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Abstract : Models or systems based on rainfall and runoff are numerous and have been formulated and applied depending on the precipitation regime, temperature, and climate. In this study, the ArcCN-Runoff rain-runoff modeling tool was used to estimate the spatial variability of the rainfall-runoff relationship in Sartang Ramon in Jiroft watershed. In this study, the runoff was estimated from 6-hour rainfall. The results showed that based on hydrological soil group map, soils with hydrological groups A, B, C, and D covered 1, 2, 55, and 41% of the basin, respectively. Given that the majority of the area has a slope above 60 percent and results of soil hydrologic groups, one can conclude that Sartang Ramon Basin has a relatively high potential for producing runoff. The average runoff height for a 6-hour rainfall with a 2-year return period is 26.6 mm. The volume of runoff from the 2-year return period was calculated as the runoff height of each polygon multiplied by the area of the polygon, which is 137913486 m^3 for the whole basin.

Keywords : Arc CN-Run off, rain-runoff, return period, watershed
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