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ABSTRACT BOOK



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Parallel Session C:

Climate Change Impacts

C1: High impact regional phenomena

POSTER PRESENTATIONS

Parallel Session C: Climate Change Impacts

C1: High Impact regional phenomena

C1-P-20

Method of calculation of maximum runoff of spring flood for ungauged rivers case study the Desna river basin

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All modern methods used to calculate the runoff of rivers, both in Ukraine and abroad, are based on the assumption of the stationary nature of the formation of a long-term annual runoff. It is believed that the design value of water discharges the rare probability of exceedance, obtained by statistical processing over the past years, will remain the same in the future. But at the present stage there is already a statistical non-stationarity of hydrometeorological processes, which is confirmed by instrumentally warming of the climate.

As the calculated method used a modified version of the operator model, that allows considering "climate amendment" for the maximum snow supplies, precipitation and runoff coefficients during the flood.

The modified variant of the operator model takes into account the process of the transformation of the slope influx in to channel runoff through two transformation functions and is proposed as a calculation method for determining on the plain territory of Ukraine the maximum runoff during the spring period for ungauged rivers.

The proposed variant of determining the maximum runoff of spring flood is implemented for the rivers of the Desna basin. Consideration of possible climate change is made using the data of the regional climate model RACMO2 and scenarios RCP4.5 and RCP8.5. Analyzing the results obtained, it should be noted that the results are not significantly different, namely, in the RCP4.5 scenario, it is forecasted by the decrease of the maximum modules of spring flood resources by 2050 at the level of 5-10%, and in the more rigorous scenario (RCP8.5) - 10- 15%.

Keywords: spring flood, ungauged rivers, scenarios RCP4.5 and RCP8.5