STOCHASTIC MANAGEMENT OF THE OPEN LARGE WATER RESERVOIR WITH STORAGE FUNCTION WITH USING EVOLUTION ALGORITHM

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Described models are used random forecasting period of flow line with different length. The length is shorter than 1 year. Forecasting period of flow line is transformed to line of managing discharges with same length as forecast. Adaptive managing is used only first value of line of discharges. Stochastic management is worked with dispersion of controlling discharge value. Main advantage stochastic management is fun of possibilities. In article is described construction and evaluation of adaptive stochastic model base on genetic algorithm (classic optimization method). Model was used for stochastic management of open large water reservoir with storage function. Evolution algorithm is used as optimization algorithm. Forecasted inflow is given to model and controlling discharge value is computed by model for chosen probability of controlling discharge value. Model was tested and validated on made up large open water reservoir. Results of stochastic model were evaluated for given probability and were compared to results of same model for 100 % forecast (forecasted values are real values). The management of the large open water reservoir with storage function was done logically and with increased sum number of forecast from 300 to 500 the results given by model were better, but another increased from 500 to 750 and 1000 did not get expected improvement. Influence on course of management was tested for different length forecasted inflow and their sum number. Classical optimization model is needed too much time for calculation, therefore stochastic model base on evolution algorithm was used parallel calculation on cluster.