## عنوان مقاله:

Analysis of Possibilities to Use Predictive Mathematical Models for Studying the Dam Deformation State

## محل انتشار:

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## خلاصه مقاله:

Long-term monitoring of the safety and reliability of large dams operation has been attracting increasing attention of researchers. Moreover, special consideration is given to the study of dam displacements that characterize its global behavior. The article discusses specifics of constructing predictive mathematical models for studying the deformation process associated with displacements of the high-head dam crest. The authors present the most successfully designed predictive mathematical models for various combinations of input effective factors, including the results of field observations and the calculated values of the component displacements. These models allow forecasting the control points of the dam body for various time stages of its operation. The advantages of using a mathematical model with separate introduction of the main effective factors into the model are shown, thereby eliminating the effect of their multicollinearity. Using the example of the Sayano-Shushenskaya hydro power plant for certain time stages of the dam operation and structures with different temperature conditions (average, warm and cold in respect to annual .temperatures), the authors present the results of forecasting the dam displacements

## کلمات کلیدی:

predictive mathematical model, Forecasting, displacements of control points, structure deformations