

ATUALIZAÇÃO DO MODELO DE PREVISÃO DE COTAS DE INUNDAÇÕES PARA A CIDADE DE ESTRELA/RS

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ABSTRACT – River floods are one of the most natural types of disasters in the southern region of Brazil. The measures of control of this flood type should be based on a better coexistence of the human being with these events, since they are natural events of the rivers regime. The Vale do Taquari region frequently suffers with the flooding of the Taquari river. In this context, it sought to improve the low-cost modeling for the region of Vale do Taquari/RS, in order to contribute to the reduction of the impact of flood. So, this study aimed to establish a simplified model for predicting the maximum level of flood in real-time for the city of Estrela, based on the updating of the existing model and the use of other explanatory variables. The model has been produced by the multiple linear regression method. 59 tuning options were tested through combinations of the series of maximum level star with the explanatory variables: river levels series in sections upstream Estrela (Encantado and Muçum), which occurred on the day of the Estrela event, on earlier and concerning the maximum amount recorded during the event; as well as data series of cumulative average rainfall in the sub-basin in "x" days prior to the event. There was the best fit through quality measures: mean square error, standard error, Nash-Sutcliffe coefficient; determination and Pearson correlation. The best model found was submitted to verify the compliance of the hypothesis of the method. Based on the results it is concluded that the linear regression model composed by the equation identified as nº. 54 mod provided the best results for forecast floods in Estrela. This model is based on the maximum levels upstream in Muçum and Encantado municipality and, due to the peak time between the cities be less than one day, it is recommended to apply hourly basis. It was found that the average rainfall no statistical significance in the composition of the regression model. In summary, this study gives satisfactory results to the academic area and in the future could provide a significant social contribution, given its continuity and applicability.

Palavras-Chave – Inundações, Vale do Taquari, Modelo de previsão.

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