Development of a Numeric Model, with Explicit Solution, to Study Flood Wave Propagation.

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Abstract: The knowledge of the propagation of flood waves, in natural channels, through Saint Venant's equations, has been object of studies on the part of engineers and scientists, along years. With the progress of the digital computers, the mathematical models become a great option, in the analysis of this class problem. In this context, the uses of numerical models, in the treatment of the hydrodynamic models, has allowed more select studies of the behavior of the flood routing to be accomplished. This work treats of the study of a flood wave, through a simplified methodology, for solution of the equations of the hydrodynamic that allows the use of a numerical model with explicit solution. The influence of hydraulic parameters, inherent to the natural river, it is considered. The results show that this methodology had a great acting and it constitutes in a good way for the study of this class of problem.

Keywords: Food Control; Hydrodynamic Models; River Mechanics.