

عنوان مقاله:

D Numerical Simulation of Flow Pattern in the River Lateral Intakes Using SSIM2 Software 3

محل انتشار:

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خلاصه مقاله:

Intakes are generally used in water distribution networks, irrigation channels, sewage networks, water/wastewater treatment facilities, input to power generation facilities, and etc. Due to the flow complexity and also the effects of scale, physical models can not solely provide a clear understanding of the physics governing the flow field and it is necessary to study this phenomenon numerically along with field and experimental studies. At the first of this study, the flow numerical simulation has been performed in the direct path of rectangular channel and Navier-Stokes equations are solved by Finite-Volume Method (FVM). The flow calculations were performed in the three dimensional model using K-ε-RNG and K-ε-standard turbulence models. The K-ε-Standard turbulence model showed the best results according to the comparison of velocity profiles with the experimental results of Barkdoll et al. (1998), and the results of other numerical studies. Then, using this turbulence model, the flow velocity profiles, shear stress and pressure distribution at different sections of the main channel and intake were compared with the experimental and numerical results of other researchers; and a good agreement has been found between them.

کلمات کلیدی:

lateral intake, flow velocity profile, shear stress and pressure distribution, SSIM2 Model, turbulence models

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