Special Program in Applied Mathematics and Applied Mechanics

Using a Meshless Technique to Simulate the Hydraulic Jump

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12:30 - 14:00
308, Mathematics Research Center Building (ori. New Math. Bldg.)

The presentation aims at the modeling of internal flow field and the corresponding phenomena in the hydraulic jumps. Weakly-Compressible Moving Particle Semi-implicit (WC-MPS) method coupled with the sub-particle-scale turbulence model was applied to simulate the flow phenomena. The simulation results for both flow surface profiles and velocity distributions at different sections were compared to the experimental data. Flow phenomena showed good agreement with the numerical simulation results. The results from the experiments and simulation provided a detailed examination of the flow field during the developmental stages of hydraulic jumps.