perimeter. The wetted perimeter has a correlation with the hydraulic radius (Equation 13). According to Equation 2, total energy in the system is preserved. Based on the known parameters, back calculation can be used to compute volumetric flow rate of the fluid.

6 Conclusions

Based on this study, the KP scheme is recognized as a suitable numerical scheme to discretize the Saint-Venant equations, which is a hyperbolic PDE. ODEs resulting from the spatial discretization has a 2^{nd} order of accuracy. Hence when the KP scheme is compare with the 1^{st} order scheme, the KP scheme shows increment in the accuracy. According to the percentage error comparison, it is concluded that increment of the order of the spatial discretization improve the accuracy. Flow regime changes along the Venturi channel is observed with the Frode number. The KP scheme successfully recognized the flow regime change from subcritical to supercritical. For the Venturi section both schemes show deviation from the experimental results. However, the 1^{st} order scheme shows slightly larger overshoot and undershoot. Hence the KP scheme can be used to solve the Saint-Venant equations for the flow through a venturi channel.

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