

ABSTRACT

This thesis emphasizes 1D- open channel flow conditions with relation to two very famous hydraulic engineering program packages; MIKE 11 and HEC-RAS. Both programs are engaged to one dimensional (1D) open channel flow and have a lot of useful functionalities. The main aim of this thesis is to compare the capabilities & limitations of both programs and analyze them in different hydraulic scenarios i.e. occurrence of hydraulic jump, flows in multiple river reaches, flows in looped networks, control structures (sluice gates etc) and culverts. Moreover, this thesis also includes the substantial work on the flood plain management of a case study by both programs with the combination of Arc View GIS & HEC-GeoRAS. All the specified hydraulic scenarios have been simulated for the steady flow conditions. At the end, conclusions/suggestions for future users, based on applicability, performance and user-friendliness of both programs have been given.