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17/ENG03/039
CIVIL ENGINEERING

ii) Software used in carrying out hydraulic study of a place

a) HEC-RAS

The numerical model HEC-RAS is developed by the U-S Army Corps of Engineers. This model uses the gradient and topography to evaluate the flow depth, velocities and flooded zones. It is also useful to calculate sediment transport and water temperature

b) iRIC

iRIC (International River Interface Cooperative) is a Software developed with the purpose of offering a complete simulation environment of the riverbed and its results can be exported and used to analyze, mitigate and prevent disasters through the visualization of the results of the river simulation.

c) SWAT

SWAT is a tool to evaluate soil and water at a basin scale. It is focused in precipitation - runoff modeling and transport of water and solutes through surface flow. It predicts the impacts of soil management practices in water resources

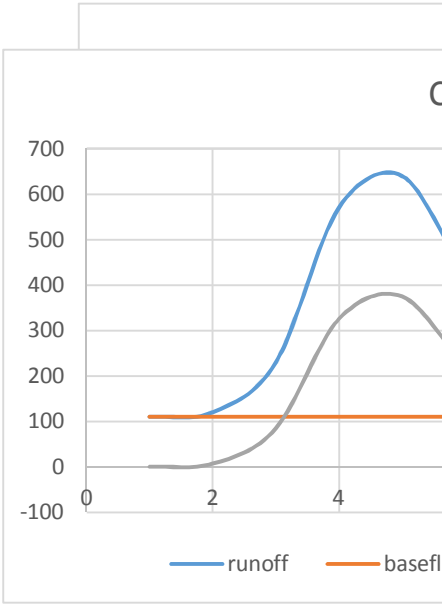
d) SAGA GIS

SAGA GIS is a GIS platform oriented to spatial analysis. SAGA GIS is a simple but powerful tool, with a long library focused on spatial analysis and characterization of basins

e) QGIS

This is the most popular GIS tool with an impressive trajectory and a vibrant community. It also even has a particular ecosystem of complements called "plugins". QGIS is a completely open source alternative that reduces the cost barriers since it does not need a paid license and can be executed in any operative system

time	runoff	baseflow	direct runc	depth of di	2hr unit hydrograph ordinate
1	110	110	0	1.415	0
2	120	110	10	1.415	7.067138
3	230	110	120	1.415	84.80565
4	570	110	460	1.415	325.0883
5	640	110	530	1.415	374.5583
6	430	110	320	1.415	226.1484
7	290	110	180	1.415	127.2085
8	200	110	90	1.415	63.60424
9	160	110	50	1.415	35.33569
10	120	110	10	1.415	7.067138
11	90	90	0	1.415	0
12	80	80	0	1.415	0



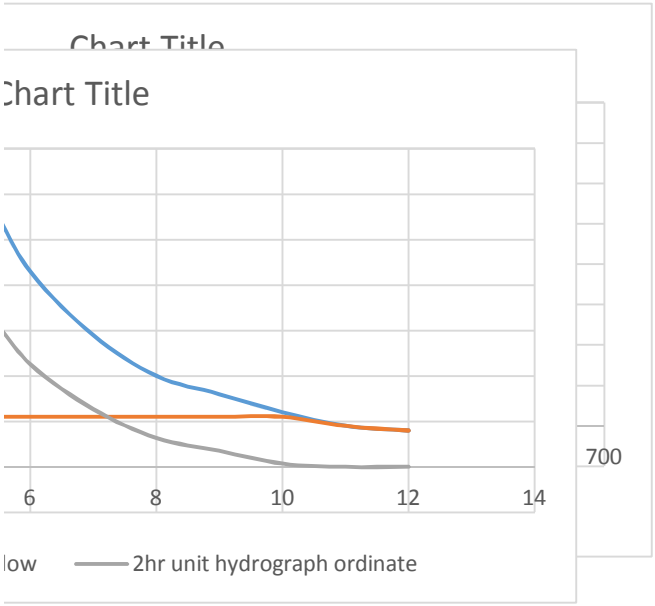


Chart Title
6
8
10
12
14
700
low
2hr unit hydrograph ordinate