

# **A WAF SCHEME FOR SHALLOW WATER EQUATIONS WITH SOURCE TERMS AND POLLUTANT TRANSPORT ON UNSTRUCTURED GRIDS**

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This work is about the application of a weighted average flux (WAF) approximation to the shallow water equations with friction, real bathymetry and pollutant transport over unstructured two dimensional grids. Despite the good numerical properties (at least in theory which assumes second order in time and space), the WAF approximation is rarely applied by the numerical community. We try through this work to apply such approximation to the HLLC scheme in order to improve its numerical properties. The preliminary results show encouraging behavior of the obtained scheme. In fact, the mass conservation, the positivity of water depth, wetting and drying, shock capturing and small numerical diffusion are proved and/or observed. Nevertheless, the second order in space and time is not reached rigorously and remains an open problem and needs deeper improvements.