

A 2D FLOOD INUNDATION MODEL BASED ON AN IMPLICIT PARALLELIZABLE SCHEME

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Summary. The European Directive 2007/60, introducing important modifications on flood risk evaluation and management, calls for extensive application in Europe of inundation models. Responding to the need of finding accurate but fast approaches, the present work describes a new implicit 2D parabolic flood inundation approach, based on an integrated finite difference scheme. The resulting non-linear system of equations is linearised using the Linear Theory approach to improve convergence, while the resulting linear system is then solved by means of the Jacobi iterative approach, which can be massively parallelized. The resulting model was tested on a number of numerical cases, offering a good compromise between computational speed and accurate reproduction of the flood event.