Start

MPI initialization

Input data, including nested grid information

Array allocation and initialization

Time loop

Grid loop

Assignments of grid and boundary conditions \((\eta, u_\alpha, v_\alpha, U, V)\)

FUNWAVE-TVD

Store boundary values for child grid

Continue

Update parent grids using child grids results \((\eta, u_\alpha, v_\alpha, U, V)\)

Continue

End

t < total time

n < nest grid number