New Telemac-3D features for v6p1 links from New version features

 v6p1 Telemac-3D
 New features of TELEMAC-3D v6.1
 The main new features of this version 6.1 are:

- The coupling with Tomawac
- Improved mixing length and log law
- New tidal flats versions of distributive schemes (now independent of edge numbering)

 Important notice:

von Karman constant has been set to 0.40 instead of 0.41

 New or modified key-words :

"COUPLING WITH" (COUPLAGE AVEC)

Default : ''

TOMAWAC is now possible in this key-word and may be used also together with Sisyphe. It goes with the following key-word.

"TOMAWAC STEERING FILE" ("FICHIER DES PARAMETRES DE TOMAWAC")

Default : ''

Give the steering file of the corresponding Tomawac case. Both programmes will exchange wave forcing terms, velocities and depth. The coupling may be used with a period, Telemac-3D calling Tomawac only every N time steps, N being the next key-word.

"TOMAWAC COUPLING PERIOD" ("PERIODE DE COUPLAGE POUR TOMAWAC")

Default : 1

As explained above.

"SISYPHE COUPLING PERIOD" ("PERIODE DE COUPLAGE POUR SISYPHE")

Default : 1

Like Tomawac but for Sisyphe. It existed in Telemac-2D but not yet in Telemac-3D.

"ACCURACY FOR DIFFUSION OF SEDIMENT" (PRECISION POUR LA DIFFUSION DU SEDIMENT)

Default : 1.E-6

This key-word was lacking, the value of tracers in general was taken.

"MAXIMUM NUMBER OF ITERATIONS FOR DIFFUSION OF SEDIMENT" (NOMBRE MAXIMUM D'ITERATIONS POUR LA DIFFUSION DU SEDIMENT)

Default : 1.E-6

This key-word was lacking, the value of tracers in general was taken.

"VELOCITY PROFILES" ("PROFILS DE VITESSE")

There is now an option 5, which is based on option 4 (velocity profile proportional to the square root of the depth) but here the depth is a virtual depth computed with the lowest free surface of the boundary. As a matter of fact it has been observed that option 4 could lead to entering flows at places where a tidal flat would have been expected: after a flood entering velocities on the floodplain maintain a water depth, which maintains velocities, and so on, which prevents water from receding. Option 5 is thus recommended to concentrate velocities in the main channel, as long as the free surface in the main channel is lower than the floodplain.

"BOUNDARY CONDITION ON THE BOTTOM" ("CONDITION A LA LIMITE AU FOND")

Integer, default: 1

If 1, will set the boundary condition on velocities on the bottom to KLOG, i.e. Neumann conditions. If 2, KADH will be set, i.e. velocities equal to 0. Can be used when the mesh is highly refined near the bottom. The no slip condition will be then strictly enforced.

"SCHEME FOR THE ADVECTION OF TRACERS" (SCHEMA POUR LA CONVECTION DES TRACEURS)

"SOLVER FOR THE DIFFUSION OF TRACERS" (SOLVEUR POUR LA DIFFUSION DES TRACEURS)

"PRECONDITIONING FOR THE DIFFUSION OF TRACERS" (PRECONDITIONNEMENT POUR LA DIFFUSION DES TRACEURS)

Integers, default : 1,1,2 respectively.

These 3 already existing keywords may now be arrays, their size being the number of tracers. Moreover, when a solver which is not suitable for non-symmetric matrices is chosen for an advection with SUPG, an error message will be issued, with the advice of choosing GMRES.

Modifications in user subroutines or new subroutines:

Condim.f: the variable NFRLIQ has now been put in declarations_telemac3d.f, which triggers a conflict because it is also an argument of condim.f (it has been kept for compatibility with old versions). The best way to avoid it is to add at the beginning :

USE DECLARATIONS_TELEMAC3D, EX_NFRLIQ⇒NFRLIQ

This renames the variable NFRLIQ seen in the declarations.

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