GAIA

Reference Manual

Version v8p5
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Contents

1. Detail list of keywords

1.1 ACCURACY FOR DIFFUSION OF SUSPENSION

Type :	Real
Dimension :	0
Mnemo	SLVSED%EPS
DEFAULT VALUE :	1.E-8
French keyword :	`PRECISION POUR LA DIFFUSION DE LA SUSPENSION`

Sets the accuracy needed for the computation of the diffusion of suspension. It is not possible to set different values for different solvers, only one is accepted.

1.2 ACTIVE LAYER THICKNESS

Type :	Real
Dimension :	0
Mnemo	ELAY0
DEFAULT VALUE :	10000.
French keyword :	`EPAISSEUR DE COUCHE ACTIVE`

Thickness for bed stratification. Composition of first layer is used to compute bed load transport rate. If you do not want a stratification, use a large value

1.3 ACTIVE LAYER THICKNESS FORMULA

Type :	Integer
Dimension :	0
Mnemo	ALT_MODEL
DEFAULT VALUE :	0
French keyword :	`ACTIVE LAYER THICKNESS FORMULA`

MODEL FOR ACTIVE LAYER THICKNESS 0 = ELAY0 (Keyword: ACTIVE LAYER THICKNESS) 1 = Hunziker & G*ü*nther 2 = Fredsoe & Deigaard (1992) 3 = van RIJN (1993) 4 = Wong (2006) 5 = Malcherek (2003) 6 = $3 * d50$ within last time steps ALT

1.4 AD LINEAR SOLVER DERIVATIVE CONVERGENCE

Type : Logical
Dimension : 1
Mnemo AD_LINSOLV_DERIVATIVE_CONVERGENCE
DEFAULT VALUE : YES
French keyword : `AD CONVERGENCE DES DERIVEES POUR LE SOLVEUR LINEAIRE`
Iterative linear solvers: derivative convergence test for AD.

1.5 AD LINEAR SOLVER RESET DERIVATIVES

Type : Logical
Dimension : 1
Mnemo AD_LINSOLV_RESETDERIV
DEFAULT VALUE : YES
French keyword : `AD REMISE A ZERO DES DERIVEES DU SOLVEUR LINEAIRE`
Resets the derivatives for AD.

1.6 AD NAMES OF DERIVATIVES

Type : String
Dimension : 2
Mnemo NAME_ADVAR
DEFAULT VALUE : 'MANDATORY'
French keyword : `AD NOMS DES DERIVEES`
Name of user derivatives in 32 characters, 16 for the name, 16 for the unit.

1.7 AD NUMBER OF DERIVATIVES

Type : Integer
Dimension : 0
Mnemo NADVAR
DEFAULT VALUE : 0
French keyword : `AD NOMBRE DE DERIVEES`
Defines the number of user derivatives, within the framework of the algorithmic differentiation.

1.8 AD NUMBER OF DIRECTIONS

Type : Integer
Dimension : 0
Mnemo AD_NUMOFDIR
DEFAULT VALUE : 1
French keyword : `AD NOMBRE DE DIRECTIONS`
Defines the number of directions for the differentiators

1.9 AD SYMBOLIC LINEAR SOLVER

Type : Logical
Dimension : 1
Mnemo AD_SYMBLINSOLV
DEFAULT VALUE : NO
French keyword : `AD SOLVEUR LINEAIRE SYMBOLIQUE`
Enables the symbolic linear solver for AD.

1.10 ADVECTION-DIFFUSION SCHEME WITH SETTLING VELOCITY

Type : Integer
Dimension : 1
Mnemo SETDEP
DEFAULT VALUE : 0
French keyword : `SCHEMA DE CONVECTION DIFFUSION AVEC VITESSE DE CHUTE`
Choice of the vertical scheme for diffusion and settling of sediment (only in 3D):

- 0: Implicit-diffusion scheme,
- 1: Implicit-convection scheme (Tridiagonal matrix solver),
- 2: **set_fall.f**

1.11 B VALUE FOR THE BIJKER FORMULA

Type : Real
Dimension : 1
Mnemo BIJK
DEFAULT VALUE : 2.E0
French keyword : `COEFFICIENT B DE LA FORMULE DE BIJKER`
b value for the Bijker formula

1.12 BED LOAD FOR ALL SANDS

Type : Logical
Dimension : 1
Mnemo CHARR
DEFAULT VALUE : NO
French keyword : `CHARRIAGE POUR TOUS LES SABLES`
Enables bedload for all sands

1.13 BED MODEL

Type : Integer
Dimension : 1
Mnemo BED_MODEL
DEFAULT VALUE : 1
French keyword : `MODELE DE LIT`
3 kinds of bed model are available: 1 : multilayers (automatic active layer if several classes) 2 : multilayer with consolidation 3 : consolidation model based on Gibson theory

1.14 BED ROUGHNESS PREDICTOR OPTION

Type : Integer
Dimension : 1
Mnemo IKS
DEFAULT VALUE : 1
French keyword : `OPTION DU PREDICTEUR DE RUGOSITE`
1: Flat bed, 2: Rippled bed, 3: Dunes and mega ripples (Method of Van Rijn)

1.15 BED-LOAD TRANSPORT FORMULA FOR ALL SANDS

Type : Integer
Dimension : 1
Mnemo ICF
DEFAULT VALUE : 1
French keyword : FORMULE DE TRANSPORT SOLIDE POUR TOUS LES SABLES
10 bed-load or total load transport formulas are implemented in GAIA. The formula Ne3, Ne30 and Ne9 should not be used in the case of coupling with the suspension. The formula Ne4, Ne5, Ne8 and Ne9 model the transport under the combined action of currents and waves : 1 : MEYER-PETER (bed load) 2 : EINSTEIN-BROWN (bed load) 3 : ENGELUND-HANSEN + CHOLLET AND CUNGE (VERSION 5.3) 30: ENGELUND-HANSEN (total) 4 : BIJKER (bed load + suspension) 5 : SOULSBY - VAN RIJN (bed load + suspension) 6 : HUNZIKER (only for sand grading) IN THIS CASE HIDING FACTOR KEYWORD DISCARDED And Hunziker formula used 7 : VAN RIJN (bed load) 8 : BAILARD (bed load + suspension) 9 : DIBAJNIA ET WATANABE (total) 10 : WILCOCK AND CROWE (graded sediment) Users can also program other formulas (subroutine bedload_qb_user.f) setting this key word to zero : 0 : FORMULA PROGRAMMED BY USER Warning : it is not then possible to choose the option VARIABLE TIME-STEP

1.16 BEDLOAD BOUNDARIES FILE

Type : String
Dimension : 1
Mnemo GAI_FILES(GAILIQ)
DEFAULT VALUE : ”
French keyword : FICHIER DES FRONTIERES POUR LE CHARRIAGE
Variations in time of boundary conditions in bedload. Data of this file are read on channel GAI_FILES(GAILIQ)

1.17 BETA

Type : Real
Dimension : 1
Mnemo
DEFAULT VALUE : 1.3
French keyword : BETA
Specifies the value of the beta coefficient used in the Koch and Flokstra slope effect formulation.

1.18 BOTTOM TOPOGRAPHY FILE

Type : String
Dimension : 1
Mnemo GAI_FILES(GAIFON)
DEFAULT VALUE : ”
French keyword : FICHIER DES FONDS
Name of the possible file containing the bathymetric data.

1.19 BOUNDARY CONDITIONS FILE

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAILIM)
DEFAULT VALUE :	'MANDATORY'
French keyword :	`FICHIER DES CONDITIONS AUX LIMITES`

Name of the file containing the types of boundary conditions. This file is filled automatically by the mesh generator through colours that are assigned to the computation domain boundary nodes.

1.20 C-VSM FULL PRINTOUT PERIOD

Type :	Integer
Dimension :	0
Mnemo	CVSMPPERIOD
DEFAULT VALUE :	0
French keyword :	`C-VSM FULL PRINTOUT PERIOD`

Number of Timesteps to next printout of the full C-VSM. These printouts are highly time and disc consuming. 0 = Coupled to GRAPHIC PRINTOUT PERIOD >0 = Own printout period for the C-VSM

1.21 C-VSM MAXIMUM SECTIONS

Type :	Integer
Dimension :	0
Mnemo	PRO_MAX_MAX
DEFAULT VALUE :	200
French keyword :	`C-VSM MAXIMUM SECTIONS`

Defines the maximum discretisation of the Continous Vertical Sorting Model: Should be bigger than 8xNumber of Fractions. The bigger the higher the RAM requirements, but the faster and accurater the bookkeeping of the sediments.

1.22 C-VSM PRINTOUT SELECTION

Type :	String
Dimension :	1
Mnemo	CVSMOUTPUT
DEFAULT VALUE :	'0;0;0;0;0;0;0;0;0;0;0;0;0;0'
French keyword :	`C-VSM PRINTOUT SELECTION`

Printout the C-VSM for the whole model as 3D `C-VSM RESULTS FILE` or / and for some nodes as `C-VSM NODE FILE` Give Up to 100 INTEGER numbers separated by ";" 0 = Full model .-> VSPRES N = 1,2...NPOINT; 2D-ID of a SELFIN MESH POINT ->*_VSP.CSV

1.23 C-VSM RESULTS FILE

Type :	String
Dimension :	0
Mnemo	GAI_FILES(VSPRES)%NAME
DEFAULT VALUE :	''
French keyword :	`FICHIER DES RESULTATS C-VSM`

Name of the file into which the C-VSM results of the computation are written, the periodicity being given by the keyword: `C-VSM FULL PRINTOUT PERIOD`.

1.24 C-VSM RESULTS FILE FORMAT

Type : String
Dimension : 1
Mnemo GAI_FILES(VSPRES)%FMT
DEFAULT VALUE : 'SERAFIN'
French keyword : `FORMAT DU FICHIER DES C-VSM RESULTATS`

Format of the `C-VSM RESULT FILE`. Possible choices are:

- SERAFIN : classical single precision format in TELEMAC,
- SERAFIND: classical double precision format in TELEMAC,
- MED : MED double precision format based on HDF5.

1.25 CHECKING THE MESH

Type : Logical
Dimension : 0
Mnemo CHECK_MESH
DEFAULT VALUE : NO
French keyword : `VERIFICATION DU MAILLAGE`

if this key word is equal to yes, a call to subroutine checkmesh will look for errors in the mesh, superimposed points, etc.

1.26 CLASSES CRITICAL SHEAR STRESS FOR MUD DEPOSITION

Type : Real
Dimension : 2
Mnemo TOCD_MUD0
DEFAULT VALUE : 1000.;1000.
French keyword : `CONTRAINTE CRITIQUE DE DEPOT DE LA VASE PAR CLASSE`

Critical shear stress for deposition (Pa)

1.27 CLASSES HIDING FACTOR

Type : Real
Dimension : 2
Mnemo HIDI
DEFAULT VALUE : 1.;1.
French keyword : `HIDING FACTOR PAR CLASSE`

Sets value of hiding factor for particular size class.

1.28 CLASSES IMPOSED SOLID DISCHARGES DISTRIBUTION

Type : Real
Dimension : 2
Mnemo RATIO_DEBIMP
DEFAULT VALUE : MANDATORY
French keyword : `DISTRIBUTION DES DEBITS IMPOSES PAR CLASSE`

Gives the proportion of the imposed solid discharge for each class. Give one numbre for each non-cohesive class

1.29 CLASSES INITIAL FRACTION

Type : Real
Dimension : 2
Mnemo AVA0
DEFAULT VALUE : 1.;0.
French keyword : `FRACTION INITIALE PAR CLASSE`
Sets the value of the initial fraction of each sediment class. Beware that the sum over all classes must be equal to 1.

1.30 CLASSES SEDIMENT DENSITY

Type : Real
Dimension : 2
Mnemo XMVS0
DEFAULT VALUE : 2650.;2650.
French keyword : `MASSE VOLUMIQUE DU SEDIMENT PAR CLASSE`
Sets the value of the sediment density for each class en Kg/m3

1.31 CLASSES SEDIMENT DIAMETERS

Type : Real
Dimension : 2
Mnemo DCLA
DEFAULT VALUE : .01;.01
French keyword : `DIAMETRES DES GRAINS PAR CLASSE`
Sets value of diameter dm for particular size class.

1.32 CLASSES SETTLING VELOCITIES

Type : Real
Dimension : 2
Mnemo XWC0
DEFAULT VALUE : -9;-9.
French keyword : `VITESSES DE CHUTE PAR CLASSE`
Sets the value of settling velocity for every sediment. Give a negative value to use the Stokes, Zanke or Van Rijn formulae (depending on the grain size)

1.33 CLASSES SHIELDS PARAMETERS

Type : Real
Dimension : 2
Mnemo AC
DEFAULT VALUE : -9.;-9.
French keyword : `PARAMETRES DE SHIELDS PAR CLASSE`
Used to determine the critical bed shear stress value (non-cohesive sediments). For multi grain size, the shields parameter needs to be specified for each class. It is necessary to give a negative value in the parameter file for cohesive sediments.

1.34 CLASSES TYPE OF SEDIMENT

Type : String
Dimension : 2
Mnemo TYPE_SED
DEFAULT VALUE : 'MANDATORY'
French keyword : `TYPE DE SEDIMENT PAR CLASSE`
Liste of types of sediment: cohesive (CO) ou non cohesive (NCO).

1.35 COEFFICIENT FOR DIFFUSION OF SUSPENDED SEDIMENTS

Type : Real
Dimension : 1
Mnemo DIFSEDNU
DEFAULT VALUE : 1.E-6
French keyword : `COEFFICIENT DE DIFFUSION DES SEDIMENTS EN SUSPENSION`
Sets the value of the suspended sediments diffusivity in 2D. This value may have a significant effect on the evolution of sediments in time. It is a scalar (one value for all sediments).

1.36 COEFFICIENT FOR HORIZONTAL DIFFUSION OF SUSPENDED SEDIMENTS

Type : Real
Dimension : 2
Mnemo DNUSEDH
DEFAULT VALUE : MANDATORY
French keyword : `COEFFICIENT DE DIFFUSION HORIZONTAL DES SEDIMENTS EN SUSPENSION`
Sets the values of the horizontal diffusion of sediments in 3D. These values may have a significant effect on the evolution of sediments in time. It is an array, with one value per suspended sediment, separated by semicolons.

1.37 COEFFICIENT FOR VERTICAL DIFFUSION OF SUSPENDED SEDIMENTS

Type : Real
Dimension : 2
Mnemo DNUSEDV
DEFAULT VALUE : MANDATORY
French keyword : `COEFFICIENT DE DIFFUSION VERTICAL DES SEDIMENTS EN SUSPENSION`
Sets the values of the vertical diffusion of sediments in 3D. These values may have a significant effect on the evolution of sediments in time. It is an array, with one value per suspended sediment, separated by semicolons.

1.38 COEFFICIENT RELATIVE TO FLOC DESTRUCTION

Type : Real
Dimension : 1
Mnemo TURBB
DEFAULT VALUE : 0.09
French keyword : `COEFFICIENT TRADUISANT LA DESTRUCTION DES FLOCS`
TODO: WRITE HELP FOR THAT KEYWORD

1.39 COMPUTATION CONTINUED

Type :	Logical
Dimension :	0
Mnemo	DEBU
DEFAULT VALUE :	NO
French keyword :	SUITE DE CALCUL

Determines whether the computation under way is an independent result or is following an earlier result. NO: It is the first run for this computation and a whole set of initial conditions should be defined. YES: It follows a former computation: the initial conditions consist in the last time step of the PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE in the steering file used for submitting the computation. All the data from the steering file may be defined once again, which provides an opportunity to change, for example, the time step. It is also possible to define new boundary conditions.

1.40 COMPUTE BED ROUGHNESS AT SEDIMENT SCALE

Type :	Logical
Dimension :	0
Mnemo	KSCALC
DEFAULT VALUE :	NO
French keyword :	CALCUL DE LA RUGOSITE SEDIMENTAIRE

Compute a bed roughness at the sediment scale - see BED ROUGHNESS PREDICTOR OPTION -. It can be different from the hydrodynamics roughness due to the action of waves or to a space-time varying grain size distribution. This roughness could be sent to Telemac but it is not supported yet.

1.41 CONSTANT ACTIVE LAYER THICKNESS

Type :	Logical
Dimension :	1
Mnemo	CONST_ALAYER
DEFAULT VALUE :	YES
French keyword :	EPAISSEUR DE COUCHE ACTIVE CONSTANTE

constant active layer thickness or not

1.42 CONTROL SECTIONS

Type :	Integer
Dimension :	3
Mnemo	CTRLSC
DEFAULT VALUE :	MANDATORY
French keyword :	SECTIONS DE CONTROLE

Couples of points (global numbers in the mesh) defining sections where the instantaneous and cumulated discharges will be given

1.43 CORRECTION ON CONVECTION VELOCITY

Type :	Logical
Dimension :	0
Mnemo	CORR_CONV
DEFAULT VALUE :	NO
French keyword :	CORRECTION DU CHAMP CONVECTEUR

Modification of 2D convection velocities to account for velocity and concentration profiles

1.44 D90 SAND DIAMETER FOR ONLY ONE CLASS

Type :	Real
Dimension :	1
Mnemo	D90
DEFAULT VALUE :	.01
French keyword :	`DIAMETRE D90 POUR UNE SEULE CLASSE DE SABLE`

Sets the value of diameter d90 for simulations with one sand class. With multiple sand classes, D90 is computed by GAIA.

1.45 DEBUGGER

Type :	Integer
Dimension :	0
Mnemo	DEBUG
DEFAULT VALUE :	0
French keyword :	`DEBUGGER`

If 1, calls of subroutines will be printed in the listing

1.46 DICTIONARY

Type :	String
Dimension :	1
Mnemo	
DEFAULT VALUE :	'gaia.dico'
French keyword :	`DICTIONNAIRE`

Key word dictionary.

1.47 EFFECT OF WAVES

Type :	Logical
Dimension :	1
Mnemo	HOULE
DEFAULT VALUE :	NO
French keyword :	`PRISE EN COMPTE DE LA HOULE`

Takes into account the effect of waves

1.48 EQUILIBRIUM INFLOW CONCENTRATION

Type :	Logical
Dimension :	0
Mnemo	IMP_INFLOW_C
DEFAULT VALUE :	NO
French keyword :	`CONCENTRATION D'EQUILIBRE EN ENTREE`

Imposes the equilibrium concentration at the inlet boundaries in 2D cases. For non cohesive sediments, the equilibrium near bed concentration is computed with respect to the suspension transport formula for all sands.

1.49 FINITE VOLUME SCHEME FOR SUSPENDED SEDIMENTS DIFFUSION

Type : Integer
Dimension : 2
Mnemo MVIST_SED
DEFAULT VALUE : 1;1
French keyword : `SCHEMA VOLUMES FINIS POUR LA DIFFUSION DES SEDIMENTS`
Choice of the finite volume diffusion model:

- 1: explicit P1 finite element,
- 2: two points flux,
- 3: reconstructed two points flux.

1.50 FINITE VOLUMES

Type : Logical
Dimension : 0
Mnemo VF
DEFAULT VALUE : NO
French keyword : `VOLUMES FINIS`
Set finite volumes method or not

1.51 FLOCCULATION

Type : Logical
Dimension : 1
Mnemo FLOC
DEFAULT VALUE : NO
French keyword : `FLOCULATION`
Decides if hindered formulation is to be used to compute settling velocity for mud. Only in 3D.

1.52 FLOCCULATION COEFFICIENT

Type : Real
Dimension : 1
Mnemo TURBA
DEFAULT VALUE : 0.3
French keyword : `COEFFICIENT TRADUISANT LA FORMATION DES FLOCS`
TODO: WRITE HELP FOR THAT KEYWORD

1.53 FLOCCULATION FORMULA

Type : Integer
Dimension : 1
Mnemo FLOC_TYPE
DEFAULT VALUE : 1
French keyword : `FORMULE POUR FLOCULATION`
Type of flocculation formula:

- 0: User defined formula ;
- 1: Van Leussen ;
- 2: Soulsby et al. (2013).

1.54 FLUXLINE

Type :	Logical
Dimension :	1
Mnemo	DOFLUX
DEFAULT VALUE :	NO
French keyword :	`FLUXLINE`

Use Fluxline to compute flux over lines

1.55 FLUXLINE INPUT FILE

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIFLX)
DEFAULT VALUE :	”
French keyword :	`FICHIER DE FLUXLINE`

Name of the Fluxline file

1.56 FORMULA FOR DEVIATION

Type :	Integer
Dimension :	1
Mnemo	DEVIA
DEFAULT VALUE :	1
French keyword :	`FORMULE POUR LA DEVIATION`

1: Koch and Flokstra 2: formula of Talmon et al. 1995, JHR 33(4) formulas (1) and (17) linked keyword : BETA2

1.57 FORMULA FOR SLOPE EFFECT

Type :	Integer
Dimension :	1
Mnemo	SLOPEFF
DEFAULT VALUE :	1
French keyword :	`FORMULE POUR EFFET DE PENTE`

Possible choices:

- 1: formula of Koch et Flokstra, modification of bed load linked keyword : `BETA`.
- 2 : formula of Soulsby, modification critical shear stress, can only be used with a threshold fomula. Linked keyword : `FRICTION ANGLE OF THE SEDIMENT`
- 3 : formula of Apsley and Stansby, modification of critical shear stress and the bed load. Linked keyword: `FRICTION ANGLE OF THE SEDIMENT`
- 4 : formula of Apsley and Stansby, modification of critical shear stress and the bed load and additionally avalanching. Linked keyword: ANGLE DE FROTTEMENT DU SEDIMENT

1.58 FORTRAN FILE

Type :	String
Dimension :	1
Mnemo	
DEFAULT VALUE :	”
French keyword :	`FICHIER FORTRAN`

Name of FORTRAN file to be submitted.

1.59 FRICTION ANGLE OF THE SEDIMENT

Type :	Real
Dimension :	1
Mnemo	PHISED
DEFAULT VALUE :	40.
French keyword :	`ANGLE DE FROTTEMENT DU SEDIMENT`

Angle of repose of the sediment. Used in the Soulsby formula to take into account the influence of bed slope on critical shear stress. Use if ...=2

1.60 GEOMETRY FILE

Type :	String
Dimension :	0
Mnemo	GAI_FILES(GAIGEO)
DEFAULT VALUE :	’MANDATORY’
French keyword :	`FICHIER DE GEOMETRIE`

Name of the file containing the mesh. This file may also contain the topography and the friction coefficients.

1.61 GEOMETRY FILE FORMAT

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIGEO)%FMT
DEFAULT VALUE :	’SERAFIN’
French keyword :	`FORMAT DU FICHIER DE GEOMETRIE`

Geometry file format. Possible values are: - SERAFIN : classical single precision format in Telemac; - SERAFIND: classical double precision format in Telemac; - MED : MED format based on HDF5

1.62 HIDING FACTOR FORMULA

Type :	Integer
Dimension :	0
Mnemo	HIDFAC
DEFAULT VALUE :	0
French keyword :	`HIDING FACTOR FORMULA`

4 hiding factor formulas are implemented in GAIA 0: const => need to give CLASSES HIDING FACTOR 1: Egiazaroff 2: Ashida & Michiue : 4: Karim, Holly & Yang

1.63 HINDERED SETTLING

Type : Logical
Dimension : 1
Mnemo HINDER
DEFAULT VALUE : NO
French keyword : VITESSE DE CHUTE ENTRAVEE
Decides if hindered formulation is to be used to compute settling velocity for mud.

1.64 HINDERED SETTLING FORMULA

Type : Integer
Dimension : 1
Mnemo HIND_TYPE
DEFAULT VALUE : 1
French keyword : FORMULE POUR VITESSE DE CHUTE ENTRAVEE
Type of hindered settling:

- 0 : User defined formula
- 1 : Whitehouse et al. (2000)
- 2 : Winterwerp (1999)

1.65 INITIAL SUSPENDED SEDIMENTS CONCENTRATION VALUES

Type : Real
Dimension : 2
Mnemo SED0
DEFAULT VALUE : 0.;0.
French keyword : VALEURS INITIALES DE CONCENTRATION DES SEDIMENTS EN SUSPENSION
Sets the initial values of suspended sediment concentration.

1.66 LAYERS CRITICAL EROSION SHEAR STRESS OF THE MUD

Type : Real
Dimension : 2
Mnemo TOCE_MUD0
DEFAULT VALUE : 0.5;1.
French keyword : CONTRAINTE CRITIQUE D'EROSION DE LA VASE PAR COUCHE
Critical erosion shear stress of the mud per layer (N per m2)

1.67 LAYERS INITIAL THICKNESS

Type : Real
Dimension : 2
Mnemo SED_THICK
DEFAULT VALUE : MANDATORY
French keyword : EPAISSEURS INITIALES PAR COUCHE
Sediment layers thickness (m) for initialisation.

1.68 LAYERS MASS TRANSFER

Type : Real
Dimension : 2
Mnemo TRANS_MASS0
DEFAULT VALUE : MANDATORY
French keyword : `TRANSFERT DE MASSE PAR COUCHE`
Mass transfert coefficients of the multilayer consolidation model in s-1

1.69 LAYERS MUD CONCENTRATION

Type : Real
Dimension : 2
Mnemo CONC_MUD0
DEFAULT VALUE : MANDATORY
French keyword : `CONCENTRATIONS DE LA VASE PAR COUCHE`
Concentrations of the mud-bed in g per l (per layer)

1.70 LAYERS NON COHESIVE BED POROSITY

Type : Real
Dimension : 2
Mnemo XKV0
DEFAULT VALUE : 0.4;0.4
French keyword : `POROSITE DU LIT NON COHESIF PAR COUCHE`
The bed volume concentration CSF=(1-porosity) is used to calculate the bed evolution of non-cohesive sand transport.

1.71 LAYERS PARTHENIADES CONSTANT

Type : Real
Dimension : 2
Mnemo PARTHENIADES0
DEFAULT VALUE : 1.E-3;1.E-3
French keyword : `CONSTANTE DE PARTHENIADES PAR COUCHE`
constant of the Krone and Partheniades erosion law (Kg/m2/s)

1.72 LISTING PRINTOUT PERIOD

Type : Integer
Dimension : 1
Mnemo
DEFAULT VALUE : 1
French keyword : `PERIODE DE SORTIE LISTING`
Determines, in number of time steps, the printout period of the ”VARIABLES TO BE PRINTED”. The results are printed out on the listing file (file cas_numerodeprocessus.sortie on a workstation).

1.73 MASS-BALANCE

Type : Logical
Dimension : 1
Mnemo
DEFAULT VALUE : NO
French keyword : `BILAN DE MASSE`
Determines whether a check of the mass-balance over the domain is made or not

1.74 MATRIX STORAGE

Type : Integer
Dimension : 0
Mnemo OPTASS
DEFAULT VALUE : 1
French keyword : `STOCKAGE DES MATRICES`
Defines the method to store matrices. The possible choices are:

- 1: classical EBE,
- 3: edge-based storage.

1.75 MATRIX-VECTOR PRODUCT

Type : Integer
Dimension : 0
Mnemo PRODUC
DEFAULT VALUE : 1
French keyword : `PRODUIT MATRICE-VECTEUR`
Possible choices are:

- 1: classic,
- 2: frontal. Beware, with option 2, a special numbering of points is required.

1.76 MAXIMUM NUMBER OF BOUNDARIES

Type : Integer
Dimension : 1
Mnemo MAXFRO
DEFAULT VALUE : 30
French keyword : `NOMBRE MAXIMUM DE FRONTIERES`
maximal number of boundaries in the mesh. Used for dimensioning arrays. Can be increased if needed

1.77 MAXIMUM NUMBER OF ITERATIONS FOR POSITIVE THICKNESS

Type : Integer
Dimension : 0
Mnemo MAXADV
DEFAULT VALUE : 50
French keyword : `MAXIMUM D'ITERATIONS POUR LES EPAISSEURS POSITIVES`
Only for bedload in finite elements. Parameter for positive_depths. Old default value = 10 until release 8.1.

1.78 MAXIMUM NUMBER OF ITERATIONS FOR SOLVER FOR SUSPENSION

Type : Integer
Dimension : 1
Mnemo SLVSED(I)%NITMAX
DEFAULT VALUE : 60
French keyword : `MAXIMUM D'ITERATIONS POUR LE SOLVEUR POUR LA SUSPENSION`
Limits the number of solver iterations for the diffusion of sediments.

1.79 MINIMAL VALUE OF THE WATER HEIGHT

Type : Real
Dimension : 1
Mnemo HMIN
DEFAULT VALUE : 1.E-3
French keyword : `VALEUR MINIMUM DE H`
Sets the minimum value of the water depth. Is used when the keyword TIDAL FLATS is equal to yes.

1.80 MINIMUM DEPTH FOR BEDLOAD

Type : Real
Dimension : 1
Mnemo HMIN_BEDLOAD
DEFAULT VALUE : 1.E-2
French keyword : `PROFONDEUR MINIMUM POUR LE CHARRIAGE`
To cancel sediment fluxes to and from dry points

1.81 MORPHOLOGICAL FACTOR

Type : Real
Dimension : 1
Mnemo MOFAC
DEFAULT VALUE : 1.
French keyword : `FACTEUR MORPHOLOGIQUE`
Amplification coefficient for bed evolution

1.82 MPM COEFFICIENT

Type : Real
Dimension : 1
Mnemo MPM
DEFAULT VALUE : 8.0E-00
French keyword : `MPM COEFFICIENT`
Alpha coefficient for Meyer-Peter and Muller formula

1.83 NAMES OF PRIVATE VARIABLES

Type : String
Dimension : 2
Mnemo NAMES_PRIVE
DEFAULT VALUE : 'MANDATORY'
French keyword : `NOMS DES VARIABLES PRIVEES`

Name of private variables in 32 characters, 16 for the name, 16 for the unit. They are stored in the block PRIVE and can be read in the geometry file if they are here with their name

1.84 NESTOR

Type : Logical
Dimension : 0
Mnemo NESTOR
DEFAULT VALUE : NO
French keyword : `NESTOR`
For coupling with NESTOR

1.85 NESTOR ACTION FILE

Type : String
Dimension : 1
Mnemo GAI_FILES(SINACT)
DEFAULT VALUE : ”
French keyword : `FICHIER DE NESTOR ACTION`
Name of the Nestor steering file

1.86 NESTOR POLYGON FILE

Type : String
Dimension : 1
Mnemo GAI_FILES(SINPOL)
DEFAULT VALUE : ”
French keyword : `FICHIER DE NESTOR POLYGON`
Name of the Nestor polygon file

1.87 NESTOR RESTART FILE

Type : String
Dimension : 1
Mnemo GAI_FILES(SINRST)
DEFAULT VALUE : ”
French keyword : `FICHIER DE NESTOR RESTART`
Name of the Nestor file phydef-cf.cfg.ds

1.88 NESTOR SURFACE REFERENCE FILE

Type : String
Dimension : 1
Mnemo GAI_FILES(SINREF)
DEFAULT VALUE : ”
French keyword : `FICHIER DE NESTOR DE SURFACE REFERENCE`
Name of the Nestor file which contains the reference water surface

1.89 NUMBER OF LAYERS FOR INITIAL STRATIFICATION

Type :	Integer
Dimension :	1
Mnemo	NUMSTRAT
DEFAULT VALUE :	1
French keyword :	`NOMBRE DE COUCHES POUR STRATIFICATION INITIALE`

Number of layers for initial stratification, default NUMSTRAT=1

1.90 NUMBER OF LAYERS OF THE CONSOLIDATION MODEL

Type :	Integer
Dimension :	0
Mnemo	NCOUCH_TASS
DEFAULT VALUE :	1
French keyword :	`NOMBRE DE COUCHES POUR LE TASSEMENT`

Vertical bed structure - The number of layers should be less than 10

1.91 NUMBER OF PRIVATE ARRAYS

Type :	Integer
Dimension :	0
Mnemo	NPRIV
DEFAULT VALUE :	1
French keyword :	`NOMBRE DE TABLEAUX PRIVES`

Number of arrays for own user programming

1.92 OPTION FOR THE TREATMENT OF TIDAL FLATS

Type :	Integer
Dimension :	1
Mnemo	OPTBAN
DEFAULT VALUE :	1
French keyword :	`OPTION DE TRAITEMENT DES BANCS DECOUVRANTS`

Used if ”TIDAL FLATS” is true 1 : EQUATIONS SOLVED EVERYWHERE WITH CORRECTION ON TIDAL FLATS 2 : DRY ELEMENTS FROZEN It is recommended to choose 1 since it ensures mass conservation.

1.93 ORIGIN COORDINATES

Type :	Integer
Dimension :	2
Mnemo	I_ORIG,J_ORIG
DEFAULT VALUE :	0;0
French keyword :	`COORDONNEES DE L'ORIGINE`

Value in metres, used to avoid large real numbers, added in Selafin format, but so far no other treatment

1.94 OUTPUT TIME ACCORDING TO MORPHOLOGICAL FACTOR

Type : Logical
Dimension : 1
Mnemo OUTPUT_MOFAC
DEFAULT VALUE : NO
French keyword : `TEMPS DE SORTIE CORRESPONDANT AU FACTEUR MORPHOLOGIQUE`
If yes the output time in the GAIA result file will be equal to the hydrodynamic time multiplied by the morphological factor.

1.95 PARALLEL PROCESSORS

Type : Integer
Dimension : 0
Mnemo NCSIZE
DEFAULT VALUE : 0
French keyword : `PROCESSEURS PARALLELES`
NUMBER OF PROCESSORS FOR PARALLEL PROCESSING 0 : 1 machine, compiling without parallel library 1 : 1 machine, compiling with a parallel library 2 : 2 processors or machines in parallel etc....

1.96 PARAMETER FOR DEVIATION

Type : Real
Dimension : 1
Mnemo BETA2
DEFAULT VALUE : 0.85
French keyword : `PARAMETRE POUR LA DEVIATION`
Parameter pour la deviation pour la formule de Talmon et al.

1.97 PRECONDITIONING FOR DIFFUSION OF SUSPENSION

Type : Integer
Dimension : 1
Mnemo SLVSED(I)%PRECON
DEFAULT VALUE : 2
French keyword : `PRECONDITIONNEMENT POUR LA DIFFUSION DE LA SUSPENSION`
Choice of preconditioning for the diffusion of sediments. Possible choices are:

- 0: no preconditioning,
- 2: diagonal,
- 3: diagonal with the condensed matrix in 3D,
- 5: diagonal with absolute values in 3D,
- 7: Crout,
- 11: Gauss-Seidel EBE in 3D,
- 13: matrix defined by the user in 3D,
- 14: diagonal and Crout,

- 17: direct solver on the vertical in 3D,
- 21: diagonal condensed and Crout in 3D,
- 34: diagonal and direct solver on the vertical in 3D.

1.98 PRESCRIBED SOLID DISCHARGES

Type :	Real
Dimension :	2
Mnemo	SOLDIS
DEFAULT VALUE :	MANDATORY
French keyword :	`DEBITS SOLIDES IMPOSES`

Values of prescribed solid discharges at the inflow boundaries (kg/s). One value per liquid boundary

1.99 PRESCRIBED SUSPENDED SEDIMENTS CONCENTRATION VALUES

Type :	Real
Dimension :	2
Mnemo	PRESED
DEFAULT VALUE :	MANDATORY
French keyword :	`VALEURS IMPOSEES DES CONCENTRATIONS DES SEDIMENTS EN SUSPENSION`

Suspended sediment concentration values prescribed at the inflow boundaries. Determines the imposed value of sediments at the first boundary, then at the second and so on, with the same logic as tracers.

1.100 PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE

Type :	String
Dimension :	0
Mnemo	GAI_FILES(GAIPRE)
DEFAULT VALUE :	”
French keyword :	`FICHIER PRECEDENT SEDIMENTOLOGIQUE`

Name of a file containing the results of an earlier sedimentological computation which was made on the same mesh. The last recorded time step will provide the initial conditions for the new computation.

1.101 PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE FORMAT

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIPRE)%FMT
DEFAULT VALUE :	’SERAFIN’
French keyword :	`FORMAT DU FICHIER PRECEDENT SEDIMENTOLOGIQUE`

Previous computation results file format. Possible values are: - SERAFIN : classical single precision format in Telemac; - SERAFIND: classical double precision format in Telemac; - MED : MED format based on HDF5

1.102 RATIO BETWEEN SKIN FRICTION AND MEAN DIAMETER

Type : Real
Dimension : 1
Mnemo KSPRATIO
DEFAULT VALUE : 3.0
French keyword : `RATIO ENTRE LA RUGOSITE DE PEAU ET LE DIAMETRE MOYEN`

Ratio for the computation of skin friction. skin roughness = ratio * mean diameter (for the mixture of sand, the mean diameter used is a value per node which is computed thanks to the fraction and the mean diameter of each sediment for each node of the mesh) if KSPRATIO =0 : use skin friction prediction from Van Rijn (2007) for currents and the Wiberg and Harris method for waves

1.103 RECORD NUMBER FOR RESTART

Type : Integer
Dimension : 1
Mnemo START_RECORD
DEFAULT VALUE : -1
French keyword : `ENREGISTREMENT POUR SUITE DE CALCUL`

In case of `COMPUTATION CONTINUED` = YES, record number to start from in the `PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE`. -1 means the last record is taken.

1.104 RECORD NUMBER IN RESTART FILE

Type : Integer
Dimension : 1
Mnemo RESTART_RECORD
DEFAULT VALUE : -1
French keyword : `NUMERO DE L'ENREGISTREMENT DANS LE FICHIER POUR SUITE`

Determines the number of time step when printing the variables to be saved for a perfect restart in the `RESTART FILE`. Default = -1 means the `RESTART FILE` is only written at the last time step and/or periodically at the period `RESTART FILE PRINTOUT PERIOD`.

1.105 REFERENCE FILE

Type : String
Dimension : 0
Mnemo GAI_FILES(GAIREF)
DEFAULT VALUE : ”
French keyword : `FICHIER DE REFERENCE`

Name of the file used to validate the computation. If VALIDATION = YES, the results of the computation will be compared with the values of this file. The comparison is made by the subroutine VALIDA.

1.106 REFERENCE FILE FORMAT

Type : String
Dimension : 1
Mnemo GAI_FILES(GAIREF)%FMT
DEFAULT VALUE : ’SERAFIN’
French keyword : `FORMAT DU FICHIER DE REFERENCE`

Previous computation results file format. Possible values are: - SERAFIN : classical single

precision format in Telemac; - SERAFIND: classical double precision format in Telemac; - MED : MED format based on HDF5

1.107 RELEASE

Type :	String
Dimension :	1
Mnemo	
DEFAULT VALUE :	'TRUNK'
French keyword :	`NUMERO DE VERSION`

Release of the libraries used by GAIA.

1.108 RESTART FILE

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIRST)%NAME
DEFAULT VALUE :	”
French keyword :	`FICHIER POUR SUITE`

Name of the file into which the computation results shall be written in order to get a perfect continued computation. It is then an output file for the current computation, which will be used as an input file when a continued computation is expected to be perfect (the keyword `PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE` is then used). The `RESTART FILE FORMAT` and the `PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE FORMAT` have to be set with ”SERAFIND” or ”MED”.

1.109 RESTART FILE FORMAT

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIRST)%FMT
DEFAULT VALUE :	'SERAFIND'
French keyword :	`FORMAT DU FICHIER POUR SUITE`

Format of the `RESTART FILE`. Possible choices are:

- SERAFIN : classical single precision format in TELEMAC,
- SERAFIND: classical double precision format in TELEMAC,
- MED : MED double precision format based on HDF5.

Only double precision formats ensure a perfect restart.

1.110 RESTART FILE PRINTOUT PERIOD

Type :	Integer
Dimension :	1
Mnemo	RSTPRD
DEFAULT VALUE :	0
French keyword :	`PERIODE POUR LES SORTIES DU FICHIER POUR SUITE`

Determines, in number of time steps, the printout period for the variables to be saved for a perfect restart in the `RESTART FILE`. Default = 0 means the `RESTART FILE` is only written at the last time step or at the `RECORD NUMBER IN RESTART FILE`.

1.111 RESTART MODE

Type :	Logical
Dimension :	1
Mnemo	RESTART_MODE_GAI
DEFAULT VALUE :	NO
French keyword :	`MODE SUITE`

Triggers the filling of the `RESTART FILE`, which ensures a perfect restart of a computation, unlike using the `RESULTS FILE`.

1.112 RESULTS FILE

Type :	String
Dimension :	0
Mnemo	GAI_FILES(GAIRES)
DEFAULT VALUE :	'MANDATORY'
French keyword :	`FICHIER DES RESULTATS`

Name of the file into wich the computation results shall be written, the periodicity being given by the keyword GRAPHIC PRINTOUT PERIOD in telemac2d or telemac3d.

1.113 RESULTS FILE FORMAT

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIRES)%FMT
DEFAULT VALUE :	'SERAFIN'
French keyword :	`FORMAT DU FICHIER DES RESULTATS`

Results file format. Possible values are: - SERAFIN : classical single precision format in Telemac; - SERAFIND: classical double precision format in Telemac; - MED : MED format based on HDF5

1.114 SCHEME FOR ADVECTION OF SUSPENDED SEDIMENTS

Type :	Integer
Dimension :	2
Mnemo	SCHADVSED
DEFAULT VALUE :	5;5
French keyword :	`SCHEMA POUR LA CONVECTION DES SEDIMENTS EN SUSPENSION`

Choice of the advection scheme for the suspended sediments, ERIA works only in 2D. The order of the chosen scheme must follow the order of the suspended sediments.

1.115 SCHEME FOR DIFFUSION OF SUSPENDED SEDIMENTS IN 3D

Type :	Integer
Dimension :	1
Mnemo	SCHDSED
DEFAULT VALUE :	1
French keyword :	`SCHEMA POUR LA DIFFUSION DES SEDIMENTS EN SUSPENSION EN 3D`

Monitors the choice of the diffusion scheme for sediments in 3D simulations. Possible choices are:

- 0: no diffusion,
- 1: implicit.

1.116 SCHEME OPTION FOR ADVECTION OF SUSPENDED SEDIMENTS

Type : Integer
Dimension : 2
Mnemo OPTADV_SED
DEFAULT VALUE : 4;4
French keyword : `OPTION DU SCHEMA POUR LA CONVECTION DES SEDIMENTS EN SUSPENSION`
If N or PSI SCHEME: 1=explicit 2=predictor-corrector 3= predictor-corrector second-order in time 4= implicit

1.117 SECONDARY CURRENTS

Type : Logical
Dimension : 0
Mnemo SECCURRENT
DEFAULT VALUE : NO
French keyword : `COURANTS SECONDAIRES`
using the parametrisation for secondary currents

1.118 SECONDARY CURRENTS ALPHA COEFFICIENT

Type : Real
Dimension : 1
Mnemo ALPHA
DEFAULT VALUE : 1.0E-00
French keyword : `SECONDARY CURRENTS ALPHA COEFFICIENT`
Alpha coefficient of secondary current(-), Should be chosen between 0.75 (rough bottom) and 1 (smooth bottom)

1.119 SECONDARY CURRENTS FILE

Type : Logical
Dimension : 0
Mnemo HAVESECFILE
DEFAULT VALUE : NO
French keyword : `FICHIER DE COURANTS SECONDAIRES`
The radii needed for the parametrisation of secondary currents are read from SELAFIN file

1.120 SECTIONS INPUT FILE

Type : String
Dimension : 1
Mnemo GAI_FILES(GAISEC)
DEFAULT VALUE : ”
French keyword : `FICHIER DES SECTIONS DE CONTROLE`
sections input file, partitioned

1.121 SECTIONS OUTPUT FILE

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAISEO)
DEFAULT VALUE :	”
French keyword :	`SECTIONS OUTPUT FILE`

sections output file, written by the master

1.122 SEDIMENT SLIDE

Type :	Integer
Dimension :	1
Mnemo	SLIDE
DEFAULT VALUE :	0
French keyword :	`GLISSEMENT DU SEDIMENT`

Two choices of formulas, both take `FRICTION ANGLE OF THE SEDIMENT` into account:

- 0: No sliding
- 1: Sliding classic
- 2: Avalanching according Apsley and Stansby

1.123 SETTLING LAG

Type :	Logical
Dimension :	1
Mnemo	SET_LAG
DEFAULT VALUE :	NO
French keyword :	`SETTLING LAG`

Uses the velocity profile based on the Miles approximation

1.124 SKIN FRICTION CORRECTION

Type :	Integer
Dimension :	1
Mnemo	ICR
DEFAULT VALUE :	1
French keyword :	`CORRECTION FROTTEMENT DE PEAU`

Formula to modify the shear stress in sediment flow rate formulae so they use the skin bed roughness (see also KSPRATIO) 0 : No correction (TAUP= TOB), valid if the roughness provided to TELEMAC is physical - close to the skin roughness, usually estimated to 3d50 1 : Correction for a flat bed (KSP= KSPRATIO * D50) 2 : Ripple correction factor

1.125 SLOPE EFFECT

Type :	Logical
Dimension :	0
Mnemo	EFFPEN
DEFAULT VALUE :	YES
French keyword :	`EFFET DE PENTE`

If yes, slope effect taken into account: deviation + modification of critical shear stress. NO will cancel the key-words FORMULA FOR SLOPE EFFECT and FORMULA FOR DEVIATION

1.126 SOLVER FOR DIFFUSION OF SUSPENSION

Type : Integer
Dimension : 2
Mnemo SLVSED(I)%SLV
DEFAULT VALUE : 1;1
French keyword : `SOLVEUR POUR LA DIFFUSION DE LA SUSPENSION`
Choice of the solver for suspension resolution. Possible choices are:

- 1: conjugate gradient,
- 2: conjugate residual,
- 3: conjugate gradient on a normal equation,
- 4: minimum error,
- 5: squared conjugate gradient,
- 6: CGSTAB,
- 7: GMRES,
- 8: direct solver.

1.127 SOLVER OPTION FOR DIFFUSION OF SUSPENSION

Type : Integer
Dimension : 1
Mnemo SLVSED(I)%KRYLOV
DEFAULT VALUE : 5
French keyword : `OPTION DU SOLVEUR POUR LA DIFFUSION DE LA SUSPENSION`
Dimension of Krylov space for the GMRES method (7).

1.128 SPINUP TIME FOR BED UPDATING

Type : Real
Dimension : 1
Mnemo SPINUP_TIME
DEFAULT VALUE : 0.
French keyword : `TEMPS DE SPINUP POUR LA MISE A JOUR DU LIT`
Time in seconds after which bed updates are taken into account

1.129 STEERING FILE

Type : String
Dimension : 1
Mnemo
DEFAULT VALUE : ”
French keyword : `FICHIER DES PARAMETRES`
Name of the file containing the parameters of the computation. Could be written by the user with EDAMOX.

1.130 SUSPENDED SEDIMENTS CONCENTRATION VALUES AT THE SOURCES

Type : Real
Dimension : 2
Mnemo SEDSCE
DEFAULT VALUE : MANDATORY
French keyword : `VALEURS DES SEDIMENTS EN SUSPENSION DES SOURCES`

Values of the suspended sediments at the sources. All sources for the first suspended sediment, then all sources for the second suspended sediment, etc. For example, if there are 3 suspended sediments (SED1, SED2 and SED3) and 2 sources (S1 and S2), the following syntax is used:
S1_SED1;S1_SED2;S1_SED3;S2_SED1;S2_SED2;S2_SED3
10.0; 10.0; 0.0; 0.0; 10.0; 10.0

1.131 SUSPENSION FOR ALL SANDS

Type : Logical
Dimension : 1
Mnemo SUSP_SAND
DEFAULT VALUE : NO
French keyword : `SUSPENSION POUR TOUS LES SABLES`

Activate suspension for all the sands in the simulation. It is not possible to have a different behaviour between sand classes. Mud is always considered in suspension.

1.132 SUSPENSION TRANSPORT FORMULA FOR ALL SANDS

Type : Integer
Dimension : 1
Mnemo ICQ
DEFAULT VALUE : 1
French keyword : `FORMULE DE TRANSPORT POUR TOUS LES SABLES`

Different choice to compute the equilibrium near-bed concentration 1 : Zysderman and Fredsoe, equilibrium formula 2: Bijker method. The near bed concentration is related to the bedload . This option cannot be used without bedload transport 3: Van Rijn formula 4: Soulsby_van Rijn formula

1.133 THRESHOLD CONCENTRATION FOR HINDERED SETTLING

Type : Real
Dimension : 1
Mnemo CINI
DEFAULT VALUE : 0.0
French keyword : `CONCENTRATION LIMITE POUR VITESSE DE CHUTE ENTRAVEE`

The sediment concentration at which hindered settling is initiated. These values are needed when `HINDERED SETTLING` = YES.

1.134 TIDAL FLATS

Type : Logical
Dimension : 1
Mnemo
DEFAULT VALUE : YES
French keyword : `BANCS DECOUVRANTS`

When no, the specific treatments for tidal flats are by-passed. This spares time, but of course you must be sure that you have no tidal flats

1.135 TIME SERIES COORDINATES FILE

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAICOO)%NAME
DEFAULT VALUE :	”
French keyword :	`FICHIER DE COORDONNEES DES SERIES TEMPORELLES`

Name of the file containing points coordinates and periods of time where time series are extracted in the `TIME SERIES FILE`.

1.136 TIME SERIES FILE

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIHI2)%NAME
DEFAULT VALUE :	”
French keyword :	`FICHIER DES SERIES TEMPORELLES`

Name of the file into which 2D time series are written at the points defined in the `TIME SERIES COORDINATES FILE`.

1.137 TIME SERIES FILE FORMAT

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAIHI2)%FMT
DEFAULT VALUE :	’SERAFIN’
French keyword :	`FORMAT DU FICHIER DES SERIES TEMPORELLES`

Format of the `TIME SERIES FILE`. Possible choices are:

- SERAFIN : classical single precision format in TELEMAC,
- SERAFIND: classical double precision format in TELEMAC,
- MED : MED double precision format based on HDF5.

1.138 TITLE

Type :	String
Dimension :	1
Mnemo	
DEFAULT VALUE :	”
French keyword :	`TITRE`

Title of the case being considered.

1.139 TRIGONOMETRICAL CONVENTION IN WAVE FILE

Type :	Logical
Dimension :	1
Mnemo	CONV_WAVES
DEFAULT VALUE :	NO
French keyword :	`CONVENTION TRIGONOMETRIQUE DANS LE FICHIER DE HOULE`

True if the wave directions in the wave file are measured counterclockwise from the positive x-axis, false if they are measured clockwise fron geographic North

1.140 TYPE OF WAVES

Type : Integer
Dimension : 1
Mnemo TYPE_HOULE
DEFAULT VALUE : 2
French keyword : `TYPE DE HOULE`

is used to calculate Uw if Uw is calculated with Tomawac, choose 2 (default) 1= regular (monochromatic) waves 2= irregular (spectral) waves

1.141 UPWINDING FOR BEDLOAD

Type : Real
Dimension : 1
Mnemo DVF
DEFAULT VALUE : 0.5E0
French keyword : `DECENTREMENT POUR LE CHARRIAGE`

Parameter for FV solving the Exner equation, 0.5 = Centered (precise), 1 = Upwind (stable because diffusive)

1.142 VALIDATION

Type : Logical
Dimension : 1
Mnemo
DEFAULT VALUE : NO
French keyword : `VALIDATION`

This option is primarily used for the validation documents. If this keyword is equal to YES, the REFERENCE FILE is then considered as a reference which the computation is going to be compared with. The comparison is made by the subroutine VALIDA, which can be modified so as to include,for example,a comparison with an exact solution.

1.143 VARIABLES FOR GRAPHIC PRINTOUTS

Type : String
Dimension : 1
Mnemo SORTIS
DEFAULT VALUE : 'U;V;H;S;B;R;E'
French keyword : `VARIABLES POUR LES SORTIES GRAPHIQUES`

Names of variables the user wants to write into the graphic results file. Each variable is represented by a letter. See CHOIX1 above. One can use *, *A* means all fractions

1.144 VARIABLES TO BE PRINTED

Type : String
Dimension : 1
Mnemo VARIM
DEFAULT VALUE : ''
French keyword : `VARIABLES A IMPRIMER`

Names of variables the user wants to write on the listing. Each variable is represented by a letter in the same manner as it is done in the graphic results file.

1.145 VECTOR LENGTH

Type :	Integer
Dimension :	1
Mnemo	LVMAC
DEFAULT VALUE :	1
French keyword :	`LONGUEUR DU VECTEUR`

vector length on vector machines.

1.146 VERTICAL GRAIN SORTING MODEL

Type :	Integer
Dimension :	0
Mnemo	VSMTYPE
DEFAULT VALUE :	0
French keyword :	`VERTICAL GRAIN SORTING MODEL`

Defines the model of the vertical grain sorting: 0 = HR-VSM = Layer Model (Classic Hirano / Ribberink approach) 1 = C-VSM (Continous Vertical Grain Sorting Model)

1.147 VERTICAL PROFILES OF SUSPENDED SEDIMENTS

Type :	Integer
Dimension :	2
Mnemo	VERPROSED
DEFAULT VALUE :	MANDATORY
French keyword :	`PROFILS DES SEDIMENTS EN SUSPENSION SUR LA VERTICALE`

Specifies the type of profiles of sediment concentration on the vertical (only for 3D simulations). Possible choices are:

- 0: user defined,
- 1: constant,
- 2: Rouse equilibrium, constant (diluted sediment) or Rouse (sediment),
- 3: Rouse (normalized) and imposed concentration.
- 4: Rouse modified with molecular viscosity.

1.148 WATER VISCOSITY

Type :	Real
Dimension :	1
Mnemo	VCE
DEFAULT VALUE :	1.E-6
French keyword :	`VISCOSITE CINEMATIQUE EAU`

Specifies the water kinematic viscosity. M/S2

1.149 WAVE FILE

Type :	String
Dimension :	0
Mnemo	GAI_FILES(GAICOU)
DEFAULT VALUE :	”
French keyword :	FICHIER DE HOULE

Name of a file containing the results a previous TOMAWAC computation made on the same mesh. The wave data (wave height, wave period, wave angle) will be given by the last record of the file. The user has to verify that both informations (wave and current data) are consistent. Remark :The wave data can also be specified in the hydrodynamic file. the user has also the possibility to give the values of the wave data in the subroutine USER_FORCING_GAIA. This is recommended for non-steady flow simulation.

1.150 WAVE FILE FORMAT

Type :	String
Dimension :	1
Mnemo	GAI_FILES(GAICOU)%FMT
DEFAULT VALUE :	’SERAFIN’
French keyword :	FORMAT DU FICHIER DE HOULE

Wave file format. Possible values are: - SERAFIN : classical single precision format in Telemac; - SERAFIND: classical double precision format in Telemac; - MED : MED format based on HDF5

1.151 WEAK SOIL CONCENTRATION FOR MUD

Type :	Real
Dimension :	1
Mnemo	CGEL
DEFAULT VALUE :	0.0
French keyword :	CONCENTRATION LIMITE FLUIDE-SOLIDE

The sediment concentration at which sediment forms a weak soil in kg/m^3. These values are needed when HINDERED SETTLING = YES.

1.152 ZERO

Type :	Real
Dimension :	1
Mnemo	
DEFAULT VALUE :	1.E-10
French keyword :	ZERO

Sets the zero of GAIA used for clipping values.

2. List of keywords classified according to type

2.1 BED MATERIAL

2.1.1 C-VSM

ACTIVE LAYER THICKNESS FORMULA
C-VSM FULL PRINTOUT PERIOD
C-VSM MAXIMUM SECTIONS
C-VSM PRINTOUT SELECTION
VERTICAL GRAIN SORTING MODEL

2.2 BED STRUCTURE

2.2.1 INITIALIZATION

NUMBER OF LAYERS FOR INITIAL STRATIFICATION

2.3 BOUNDARY CONDITIONS

2.3.1 SETTING

SUSPENSION

PRESCRIBED SUSPENDED SEDIMENTS CONCENTRATION VALUES
SUSPENDED SEDIMENTS CONCENTRATION VALUES AT THE SOURCES
VERTICAL PROFILES OF SUSPENDED SEDIMENTS

2.4 COHESIVE

2.4.1 BED STRUCTURE

INITIALIZATION

LAYERS MUD CONCENTRATION

2.4.2 CONSOLIDATION

LAYERS MASS TRANSFER
NUMBER OF LAYERS OF THE CONSOLIDATION MODEL

2.4.3 INITIALIZATION

SUSPENSION

LAYERS CRITICAL EROSION SHEAR STRESS OF THE MUD

2.4.4 SETTLING VELOCITY

COEFFICIENT RELATIVE TO FLOC DESTRUCTION
FLOCCULATION
FLOCCULATION COEFFICIENT
FLOCCULATION FORMULA
HINDERED SETTLING
HINDERED SETTLING FORMULA
THRESHOLD CONCENTRATION FOR HINDERED SETTLING
WEAK SOIL CONCENTRATION FOR MUD

2.4.5 SUSPENSION

CLASSES CRITICAL SHEAR STRESS FOR MUD DEPOSITION
LAYERS PARTHENIADES CONSTANT

2.5 COHESIVE AND NON COHESIVE

BED MODEL

2.5.1 BED MATERIAL

CLASSES HIDING FACTOR
CLASSES INITIAL FRACTION
CLASSES SEDIMENT DIAMETERS
CLASSES TYPE OF SEDIMENT
LAYERS INITIAL THICKNESS

2.5.2 CHARRIAGE

CLASSES SHIELDS PARAMETERS

2.5.3 SUSPENSION

CLASSES SETTLING VELOCITIES
EQUILIBRIUM INFLOW CONCENTRATION

2.6 COMPUTATION ENVIRONMENT

2.6.1 GLOBAL

CHECKING THE MESH
MAXIMUM NUMBER OF BOUNDARIES
PARALLEL PROCESSORS
TITLE

2.6.2 INPUT

DATA

VALIDATION

2.6.3 OUTPUT

RESULTS

NUMBER OF PRIVATE ARRAYS

2.7 DATA FILES

BOTTOM TOPOGRAPHY FILE
BOUNDARY CONDITIONS FILE
FORTRAN FILE
REFERENCE FILE
REFERENCE FILE FORMAT
SECTIONS INPUT FILE
TIME SERIES COORDINATES FILE
WAVE FILE
WAVE FILE FORMAT

2.8 GENERAL

CONTROL SECTIONS
EFFECT OF WAVES
FLUXLINE
FLUXLINE INPUT FILE
SECONDARY CURRENTS
SECONDARY CURRENTS FILE
TRIGONOMETRICAL CONVENTION IN WAVE FILE
TYPE OF WAVES

2.9 GENERAL PARAMETERS

DEBUGGER

2.9.1 LOCATION

ORIGIN COORDINATES

2.10 HYDRODYNAMICS

2.10.1 TIDAL FLATS INFO

MINIMAL VALUE OF THE WATER HEIGHT
OPTION FOR THE TREATMENT OF TIDAL FLATS
TIDAL FLATS

2.11 INITIAL CONDITION

2.11.1 SETTING

SUSPENSION

INITIAL SUSPENDED SEDIMENTS CONCENTRATION VALUES

2.12 INITIAL CONDITIONS

PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE
PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE FORMAT
SPINUP TIME FOR BED UPDATING

2.12.1 RESTART

COMPUTATION CONTINUED
RECORD NUMBER FOR RESTART
RECORD NUMBER IN RESTART FILE
RESTART FILE
RESTART FILE FORMAT
RESTART FILE PRINTOUT PERIOD
RESTART MODE

2.13 INPUT-OUTPUT, FILES

GEOMETRY FILE FORMAT

2.13.1 NAMES

BEDLOAD BOUNDARIES FILE
GEOMETRY FILE
NAMES OF PRIVATE VARIABLES

2.14 INPUT-OUTPUT, GRAPHICS AND LISTING

VARIABLES FOR GRAPHIC PRINTOUTS

2.15 INTERNAL

DICTIONARY
RELEASE

2.16 MISCELLANEOUS

NESTOR
NESTOR ACTION FILE
NESTOR POLYGON FILE
NESTOR RESTART FILE
NESTOR SURFACE REFERENCE FILE

2.17 NON COHESIVE

LAYERS NON COHESIVE BED POROSITY

2.17.1 BED MATERIAL

ACTIVE LAYER THICKNESS
CONSTANT ACTIVE LAYER THICKNESS
D90 SAND DIAMETER FOR ONLY ONE CLASS
HIDING FACTOR FORMULA

2.17.2 BED STRUCTURE

ADVANCED

SEDIMENT SLIDE

2.17.3 BEDLOAD

B VALUE FOR THE BIJKER FORMULA
BED LOAD FOR ALL SANDS
BED-LOAD TRANSPORT FORMULA FOR ALL SANDS
MINIMUM DEPTH FOR BEDLOAD
MORPHOLOGICAL FACTOR
MPM COEFFICIENT
OUTPUT TIME ACCORDING TO MORPHOLOGICAL FACTOR

BOUNDARY CONDITIONS

PRESCRIBED SOLID DISCHARGES

SLOPE INFLUENCE

BETA
FORMULA FOR DEVIATION
FORMULA FOR SLOPE EFFECT
FRICTION ANGLE OF THE SEDIMENT
PARAMETER FOR DEVIATION
SLOPE EFFECT

2.17.4 CHARRIAGE

BOUNDARY CONDITIONS

CLASSES IMPOSED SOLID DISCHARGES DISTRIBUTION

2.17.5 FRICTION

RATIO BETWEEN SKIN FRICTION AND MEAN DIAMETER
SKIN FRICTION CORRECTION

ADVANCED

BED ROUGHNESS PREDICTOR OPTION
COMPUTE BED ROUGHNESS AT SEDIMENT SCALE

2.17.6 SUSPENSION

SETTLING LAG
SUSPENSION FOR ALL SANDS
SUSPENSION TRANSPORT FORMULA FOR ALL SANDS

2.18 NUMERICAL

FINITE VOLUMES
MATRIX STORAGE
MATRIX-VECTOR PRODUCT
ZERO

2.19 NUMERICAL PARAMETERS

MAXIMUM NUMBER OF ITERATIONS FOR POSITIVE THICKNESS

2.19.1 ADVECTION INFO

SUSPENSION

SCHEME FOR ADVECTION OF SUSPENDED SEDIMENTS
SCHEME OPTION FOR ADVECTION OF SUSPENDED SEDIMENTS

2.19.2 AUTOMATIC DIFFERENTIATION

AD LINEAR SOLVER DERIVATIVE CONVERGENCE
AD LINEAR SOLVER RESET DERIVATIVES
AD NAMES OF DERIVATIVES
AD NUMBER OF DERIVATIVES
AD NUMBER OF DIRECTIONS
AD SYMBOLIC LINEAR SOLVER

2.19.3 BEDLOAD

UPWINDING FOR BEDLOAD

2.19.4 DIFFUSION

FINITE VOLUME SCHEME FOR SUSPENDED SEDIMENTS DIFFUSION

2.19.5 SOLVER

SUSPENSION

ACCURACY FOR DIFFUSION OF SUSPENSION
MAXIMUM NUMBER OF ITERATIONS FOR SOLVER FOR SUSPENSION
PRECONDITIONING FOR DIFFUSION OF SUSPENSION
SCHEME FOR DIFFUSION OF SUSPENDED SEDIMENTS IN 3D
SOLVER FOR DIFFUSION OF SUSPENSION
SOLVER OPTION FOR DIFFUSION OF SUSPENSION

2.20 PHYSICS

CLASSES SEDIMENT DENSITY
WATER VISCOSITY

2.21 RESULTS

C-VSM RESULTS FILE
C-VSM RESULTS FILE FORMAT
LISTING PRINTOUT PERIOD
MASS-BALANCE
RESULTS FILE
RESULTS FILE FORMAT
SECTIONS OUTPUT FILE
TIME SERIES FILE
TIME SERIES FILE FORMAT
VARIABLES TO BE PRINTED

2.22 SEDIMENT INFO

2.22.1 SETTLING VELOCITY

ADVECTION-DIFFUSION SCHEME WITH SETTLING VELOCITY

2.23 SEDIMENTOLOGY

2.23.1 GENERAL

SECONDARY CURRENTS ALPHA COEFFICIENT

2.24 SUSPENSION

CORRECTION ON CONVECTION VELOCITY

2.24.1 TURBULENCE

COEFFICIENT FOR DIFFUSION OF SUSPENDED SEDIMENTS
COEFFICIENT FOR HORIZONTAL DIFFUSION OF SUSPENDED SEDIMENTS

2.25 SUSPENSIONS

2.25.1 TURBULENCE

COEFFICIENT FOR VERTICAL DIFFUSION OF SUSPENDED SEDIMENTS

2.26 USELESS

STEERING FILE
VECTOR LENGTH

3. Glossary

3.1 English/French glossary

ACCURACY FOR DIFFUSION OF SUSPENSION	PRECISION POUR LA DIFFUSION DE LA SUSPENSION
ACTIVE LAYER THICKNESS	EPAISSEUR DE COUCHE ACTIVE
ACTIVE LAYER THICKNESS FORMULA	ACTIVE LAYER THICKNESS FORMULA
AD LINEAR SOLVER DERIVATIVE CONVERGENCE	AD CONVERGENCE DES DERIVEES POUR LE SOLVEUR LINEAIRE
AD LINEAR SOLVER RESET DERIVATIVES	AD REMISE A ZERO DES DERIVEES DU SOLVEUR LINEAIRE
AD NAMES OF DERIVATIVES	AD NOMS DES DERIVEES
AD NUMBER OF DERIVATIVES	AD NOMBRE DE DERIVEES
AD NUMBER OF DIRECTIONS	AD NOMBRE DE DIRECTIONS
AD SYMBOLIC LINEAR SOLVER	AD SOLVEUR LINEAIRE SYMBOLIQUE
ADVECTION-DIFFUSION SCHEME WITH SETTLING VELOCITY	SCHEMA DE CONVECTION DIFFUSION AVEC VITESSE DE CHUTE
B VALUE FOR THE BIJKER FORMULA	COEFFICIENT B DE LA FORMULE DE BIJKER
BED LOAD FOR ALL SANDS	CHARRIAGE POUR TOUS LES SABLES
BED MODEL	MODELE DE LIT
BED ROUGHNESS PREDICTOR OPTION	OPTION DU PREDICTEUR DE RUGOSITE
BED-LOAD TRANSPORT FORMULA FOR ALL SANDS	FORMULE DE TRANSPORT SOLIDE POUR TOUS LES SABLES
BEDLOAD BOUNDARIES FILE	FICHIER DES FRONTIERES POUR LE CHARRIAGE
BETA	BETA
BOTTOM TOPOGRAPHY FILE	FICHIER DES FONDS
BOUNDARY CONDITIONS FILE	FICHIER DES CONDITIONS AUX LIMITES
C-VSM FULL PRINTOUT PERIOD	C-VSM FULL PRINTOUT PERIOD
C-VSM MAXIMUM SECTIONS	C-VSM MAXIMUM SECTIONS
C-VSM PRINTOUT SELECTION	C-VSM PRINTOUT SELECTION
C-VSM RESULTS FILE	FICHIER DES RESULTATS C-VSM

C-VSM RESULTS FILE FORMAT	FORMAT DU FICHIER DES C-VSM RESULTATS
CHECKING THE MESH	VERIFICATION DU MAILLAGE
CLASSES CRITICAL SHEAR STRESS FOR MUD DEPOSITION	CONTRAINTE CRITIQUE DE DEPOT DE LA VASE PAR CLASSE
CLASSES HIDING FACTOR	HIDING FACTOR PAR CLASSE
CLASSES IMPOSED SOLID DISCHARGES DISTRIBUTION	DISTRIBUTION DES DEBITS IMPOSES PAR CLASSE
CLASSES INITIAL FRACTION	FRACTION INITIALE PAR CLASSE
CLASSES SEDIMENT DENSITY	MASSE VOLUMIQUE DU SEDIMENT PAR CLASSE
CLASSES SEDIMENT DIAMETERS	DIAMETRES DES GRAINS PAR CLASSE
CLASSES SETTLING VELOCITIES	VITESSES DE CHUTE PAR CLASSE
CLASSES SHIELDS PARAMETERS	PARAMETRES DE SHIELDS PAR CLASSE
CLASSES TYPE OF SEDIMENT	TYPE DE SEDIMENT PAR CLASSE
COEFFICIENT FOR DIFFUSION OF SUSPENDED SEDIMENTS	COEFFICIENT DE DIFFUSION DES SEDIMENTS EN SUSPENSION
COEFFICIENT FOR HORIZONTAL DIFFUSION OF SUSPENDED SEDIMENTS	COEFFICIENT DE DIFFUSION HORIZONTAL DES SEDIMENTS EN SUSPENSION
COEFFICIENT FOR VERTICAL DIFFUSION OF SUSPENDED SEDIMENTS	COEFFICIENT DE DIFFUSION VERTICAL DES SEDIMENTS EN SUSPENSION
COEFFICIENT RELATIVE TO FLOC DESTRUCTION	COEFFICIENT TRADUISANT LA DESTRUCTION DES FLOCS
COMPUTATION CONTINUED	SUITE DE CALCUL
COMPUTE BED ROUGHNESS AT SEDIMENT SCALE	CALCUL DE LA RUGOSITE SEDIMENTAIRE
CONSTANT ACTIVE LAYER THICKNESS	EPAISSEUR DE COUCHE ACTIVE CONSTANTE
CONTROL SECTIONS	SECTIONS DE CONTROLE
CORRECTION ON CONVECTION VELOCITY	CORRECTION DU CHAMP CONVECTEUR
D90 SAND DIAMETER FOR ONLY ONE CLASS	DIAMETRE D90 POUR UNE SEULE CLASSE DE SABLE
DEBUGGER	DEBUGGER
DICTIONARY	DICTIONNAIRE
EFFECT OF WAVES	PRISE EN COMPTE DE LA HOULE
EQUILIBRIUM INFLOW CONCENTRATION	CONCENTRATION D'EQUILIBRE EN ENTREE
FINITE VOLUME SCHEME FOR SUSPENDED SEDIMENTS DIFFUSION	SCHEMA VOLUMES FINIS POUR LA DIFFUSION DES SEDIMENTS
FINITE VOLUMES	VOLUMES FINIS
FLOCCULATION	FLOCULATION
FLOCCULATION COEFFICIENT	COEFFICIENT TRADUISANT LA FORMATION DES FLOCS
FLOCCULATION FORMULA	FORMULE POUR FLOCULATION
FLUXLINE	FLUXLINE
FLUXLINE INPUT FILE	FICHIER DE FLUXLINE
FORMULA FOR DEVIATION	FORMULE POUR LA DEVIATION
FORMULA FOR SLOPE EFFECT	FORMULE POUR EFFET DE PENTE
FORTRAN FILE	FICHIER FORTRAN

FRICTION ANGLE OF THE SEDIMENT	ANGLE DE FROTTEMENT DU SEDIMENT
GEOMETRY FILE	FICHIER DE GEOMETRIE
GEOMETRY FILE FORMAT	FORMAT DU FICHIER DE GEOMETRIE
HIDING FACTOR FORMULA	HIDING FACTOR FORMULA
HINDERED SETTLING	VITESSE DE CHUTE ENTRAVEE
HINDERED SETTLING FORMULA	FORMULE POUR VITESSE DE CHUTE ENTRAVEE
INITIAL SUSPENDED SEDIMENTS CONCENTRATION VALUES	VALEURS INITIALES DE CONCENTRATION DES SEDIMENTS EN SUSPENSION
LAYERS CRITICAL EROSION SHEAR STRESS OF THE MUD	CONTRAINTE CRITIQUE D'EROSION DE LA VASE PAR COUCHE
LAYERS INITIAL THICKNESS	EPAISSEURS INITIALES PAR COUCHE
LAYERS MASS TRANSFER	TRANSFERT DE MASSE PAR COUCHE
LAYERS MUD CONCENTRATION	CONCENTRATIONS DE LA VASE PAR COUCHE
LAYERS NON COHESIVE BED POROSITY	POROSITE DU LIT NON COHESIF PAR COUCHE
LAYERS PARTHENIADES CONSTANT	CONSTANTE DE PARTHENIADES PAR COUCHE
LISTING PRINTOUT PERIOD	PERIODE DE SORTIE LISTING
MASS-BALANCE	BILAN DE MASSE
MATRIX STORAGE	STOCKAGE DES MATRICES
MATRIX-VECTOR PRODUCT	PRODUIT MATRICE-VECTEUR
MAXIMUM NUMBER OF BOUNDARIES	NOMBRE MAXIMUM DE FRONTIERES
MAXIMUM NUMBER OF ITERATIONS FOR POSITIVE THICKNESS	MAXIMUM D'ITERATIONS POUR LES EPAISSEURS POSITIVES
MAXIMUM NUMBER OF ITERATIONS FOR SOLVER FOR SUSPENSION	MAXIMUM D'ITERATIONS POUR LE SOLVEUR POUR LA SUSPENSION
MINIMAL VALUE OF THE WATER HEIGHT	VALEUR MINIMUM DE H
MINIMUM DEPTH FOR BEDLOAD	PROFONDEUR MINIMUM POUR LE CHARRIAGE
MORPHOLOGICAL FACTOR	FACTEUR MORPHOLOGIQUE
MPM COEFFICIENT	MPM COEFFICIENT
NAMES OF PRIVATE VARIABLES	NOMS DES VARIABLES PRIVEES
NESTOR	NESTOR
NESTOR ACTION FILE	FICHIER DE NESTOR ACTION
NESTOR POLYGON FILE	FICHIER DE NESTOR POLYGON
NESTOR RESTART FILE	FICHIER DE NESTOR RESTART
NESTOR SURFACE REFERENCE FILE	FICHIER DE NESTOR DE SURFACE REFERENCE
NUMBER OF LAYERS FOR INITIAL STRATIFICATION	NOMBRE DE COUCHES POUR STRATIFICATION INITIALE
NUMBER OF LAYERS OF THE CONSOLIDATION MODEL	NOMBRE DE COUCHES POUR LE TASSEMENT
NUMBER OF PRIVATE ARRAYS	NOMBRE DE TABLEAUX PRIVES
OPTION FOR THE TREATMENT OF TIDAL FLATS	OPTION DE TRAITEMENT DES BANCS DECOUVRANTS
ORIGIN COORDINATES	COORDONNEES DE L'ORIGINE
OUTPUT TIME ACCORDING TO MORPHOLOGICAL FACTOR	TEMPS DE SORTIE CORRESPONDANT AU FACTEUR MORPHOLOGIQUE

PARALLEL PROCESSORS	PROCESSEURS PARALLELES
PARAMETER FOR DEVIATION	PARAMETRE POUR LA DEVIATION
PRECONDITIONING FOR DIFFUSION OF SUSPENSION	PRECONDITIONNEMENT POUR LA DIFFUSION DE LA SUSPENSION
PRESCRIBED SOLID DISCHARGES	DEBITS SOLIDES IMPOSES
PRESCRIBED SUSPENDED SEDIMENTS CONCENTRATION VALUES	VALEURS IMPOSEES DES CONCENTRATIONS DES SEDIMENTS EN SUSPENSION
PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE	FICHIER PRECEDENT SEDIMENTOLOGIQUE
PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE FORMAT	FORMAT DU FICHIER PRECEDENT SEDIMENTOLOGIQUE
RATIO BETWEEN SKIN FRICTION AND MEAN DIAMETER	RATIO ENTRE LA RUGOSITE DE PEAU ET LE DIAMETRE MOYEN
RECORD NUMBER FOR RESTART	ENREGISTREMENT POUR SUITE DE CALCUL
RECORD NUMBER IN RESTART FILE	NUMERO DE L'ENREGISTREMENT DANS LE FICHIER POUR SUITE
REFERENCE FILE	FICHIER DE REFERENCE
REFERENCE FILE FORMAT	FORMAT DU FICHIER DE REFERENCE
RELEASE	NUMERO DE VERSION
RESTART FILE	FICHIER POUR SUITE
RESTART FILE FORMAT	FORMAT DU FICHIER POUR SUITE
RESTART FILE PRINTOUT PERIOD	PERIODE POUR LES SORTIES DU FICHIER POUR SUITE
RESTART MODE	MODE SUITE
RESULTS FILE	FICHIER DES RESULTATS
RESULTS FILE FORMAT	FORMAT DU FICHIER DES RESULTATS
SCHEME FOR ADVECTION OF SUSPENDED SEDIMENTS	SCHEMA POUR LA CONVECTION DES SEDIMENTS EN SUSPENSION
SCHEME FOR DIFFUSION OF SUSPENDED SEDIMENTS IN 3D	SCHEMA POUR LA DIFFUSION DES SEDIMENTS EN SUSPENSION EN 3D
SCHEME OPTION FOR ADVECTION OF SUSPENDED SEDIMENTS	OPTION DU SCHEMA POUR LA CONVECTION DES SEDIMENTS EN SUSPENSION
SECONDARY CURRENTS	COURANTS SECONDAIRES
SECONDARY CURRENTS ALPHA COEFFICIENT	SECONDARY CURRENTS ALPHA COEFFICIENT
SECONDARY CURRENTS FILE	FICHIER DE COURANTS SECONDAIRES
SECTIONS INPUT FILE	FICHIER DES SECTIONS DE CONTROLE
SECTIONS OUTPUT FILE	SECTIONS OUTPUT FILE
SEDIMENT SLIDE	GLISSEMENT DU SEDIMENT
SETTLING LAG	SETTLING LAG
SKIN FRICTION CORRECTION	CORRECTION FROTTEMENT DE PEAU
SLOPE EFFECT	EFFET DE PENTE
SOLVER FOR DIFFUSION OF SUSPENSION	SOLVEUR POUR LA DIFFUSION DE LA SUSPENSION
SOLVER OPTION FOR DIFFUSION OF SUSPENSION	OPTION DU SOLVEUR POUR LA DIFFUSION DE LA SUSPENSION
SPINUP TIME FOR BED UPDATING	TEMPS DE SPINUP POUR LA MISE A JOUR DU LIT

STEERING FILE	FICHIER DES PARAMETRES
SUSPENDED SEDIMENTS CONCENTRATION VALUES AT THE SOURCES	VALEURS DES SEDIMENTS EN SUSPENSION DES SOURCES
SUSPENSION FOR ALL SANDS	SUSPENSION POUR TOUS LES SABLES
SUSPENSION TRANSPORT FORMULA FOR ALL SANDS	FORMULE DE TRANSPORT POUR TOUS LES SABLES
THRESHOLD CONCENTRATION FOR HINDERED SETTLING	CONCENTRATION LIMITE POUR VITESSE DE CHUTE ENTRAVEE
TIDAL FLATS	BANCS DECOUVRANTS
TIME SERIES COORDINATES FILE	FICHIER DE COORDONNEES DES SERIES TEMPORELLES
TIME SERIES FILE	FICHIER DES SERIES TEMPORELLES
TIME SERIES FILE FORMAT	FORMAT DU FICHIER DES SERIES TEMPORELLES
TITLE	TITRE
TRIGONOMETRICAL CONVENTION IN WAVE FILE	CONVENTION TRIGONOMETRIQUE DANS LE FICHIER DE HOULE
TYPE OF WAVES	TYPE DE HOULE
UPWINDING FOR BEDLOAD	DECENTREMENT POUR LE CHARRIAGE
VALIDATION	VALIDATION
VARIABLES FOR GRAPHIC PRINTOUTS	VARIABLES POUR LES SORTIES GRAPHIQUES
VARIABLES TO BE PRINTED	VARIABLES A IMPRIMER
VECTOR LENGTH	LONGUEUR DU VECTEUR
VERTICAL GRAIN SORTING MODEL	VERTICAL GRAIN SORTING MODEL
VERTICAL PROFILES OF SUSPENDED SEDIMENTS	PROFILS DES SEDIMENTS EN SUSPENSION SUR LA VERTICALE
WATER VISCOSITY	VISCOSITE CINEMATIQUE EAU
WAVE FILE	FICHIER DE HOULE
WAVE FILE FORMAT	FORMAT DU FICHIER DE HOULE
WEAK SOIL CONCENTRATION FOR MUD	CONCENTRATION LIMITE FLUIDE-SOLIDE
ZERO	ZERO

3.2 French/English glossary

ACTIVE LAYER THICKNESS FORMULA	ACTIVE LAYER THICKNESS FORMULA
AD CONVERGENCE DES DERIVEES POUR LE SOLVEUR LINEAIRE	AD LINEAR SOLVER DERIVATIVE CONVERGENCE
AD NOMBRE DE DERIVEES	AD NUMBER OF DERIVATIVES
AD NOMBRE DE DIRECTIONS	AD NUMBER OF DIRECTIONS
AD NOMS DES DERIVEES	AD NAMES OF DERIVATIVES
AD REMISE A ZERO DES DERIVEES DU SOLVEUR LINEAIRE	AD LINEAR SOLVER RESET DERIVATIVES
AD SOLVEUR LINEAIRE SYMBOLIQUE	AD SYMBOLIC LINEAR SOLVER
ANGLE DE FROTTEMENT DU SEDIMENT	FRICTION ANGLE OF THE SEDIMENT
BANCS DECOUVRANTS	TIDAL FLATS
BETA	BETA
BILAN DE MASSE	MASS-BALANCE

C-VSM FULL PRINTOUT PERIOD	C-VSM FULL PRINTOUT PERIOD
C-VSM MAXIMUM SECTIONS	C-VSM MAXIMUM SECTIONS
C-VSM PRINTOUT SELECTION	C-VSM PRINTOUT SELECTION
CALCUL DE LA RUGOSITE SEDIMENTAIRE	COMPUTE BED ROUGHNESS AT SEDIMENT SCALE
CHARRIAGE POUR TOUS LES SABLES	BED LOAD FOR ALL SANDS
COEFFICIENT B DE LA FORMULE DE BIJKER	B VALUE FOR THE BIJKER FORMULA
COEFFICIENT DE DIFFUSION DES SEDIMENTS EN SUSPENSION	COEFFICIENT FOR DIFFUSION OF SUSPENDED SEDIMENTS
COEFFICIENT DE DIFFUSION HORIZONTAL DES SEDIMENTS EN SUSPENSION	COEFFICIENT FOR HORIZONTAL DIFFUSION OF SUSPENDED SEDIMENTS
COEFFICIENT DE DIFFUSION VERTICAL DES SEDIMENTS EN SUSPENSION	COEFFICIENT FOR VERTICAL DIFFUSION OF SUSPENDED SEDIMENTS
COEFFICIENT TRADUISANT LA DESTRUCTION DES FLOCS	COEFFICIENT RELATIVE TO FLOC DESTRUCTION
COEFFICIENT TRADUISANT LA FORMATION DES FLOCS	FLOCCULATION COEFFICIENT
CONCENTRATION D'EQUILIBRE EN ENTREE	EQUILIBRIUM INFLOW CONCENTRATION
CONCENTRATION LIMITE FLUIDE-SOLIDE	WEAK SOIL CONCENTRATION FOR MUD
CONCENTRATION LIMITE POUR VITESSE DE CHUTE ENTRAVEE	THRESHOLD CONCENTRATION FOR HINDERED SETTLING
CONCENTRATIONS DE LA VASE PAR COUCHE	LAYERS MUD CONCENTRATION
CONSTANTE DE PARTHENIADES PAR COUCHE	LAYERS PARTHENIADES CONSTANT
CONTRAINTE CRITIQUE D'EROSION DE LA VASE PAR COUCHE	LAYERS CRITICAL EROSION SHEAR STRESS OF THE MUD
CONTRAINTE CRITIQUE DE DEPOT DE LA VASE PAR CLASSE	CLASSES CRITICAL SHEAR STRESS FOR MUD DEPOSITION
CONVENTION TRIGONOMETRIQUE DANS LE FICHIER DE HOULE	TRIGONOMETRICAL CONVENTION IN WAVE FILE
COORDONNEES DE L'ORIGINE	ORIGIN COORDINATES
CORRECTION DU CHAMP CONVECTEUR	CORRECTION ON CONVECTION VELOCITY
CORRECTION FROTTEMENT DE PEAU	SKIN FRICTION CORRECTION
COURANTS SECONDAIRES	SECONDARY CURRENTS
DEBITS SOLIDES IMPOSES	PRESCRIBED SOLID DISCHARGES
DEBUGGER	DEBUGGER
DECENTREMENT POUR LE CHARRIAGE	UPWINDING FOR BEDLOAD
DIAMETRE D90 POUR UNE SEULE CLASSE DE SABLE	D90 SAND DIAMETER FOR ONLY ONE CLASS
DIAMETRES DES GRAINS PAR CLASSE	CLASSES SEDIMENT DIAMETERS
DICTIONNAIRE	DICTIONARY
DISTRIBUTION DES DEBITS IMPOSES PAR CLASSE	CLASSES IMPOSED SOLID DISCHARGES DISTRIBUTION
EFFET DE PENTE	SLOPE EFFECT
ENREGISTREMENT POUR SUITE DE CALCUL	RECORD NUMBER FOR RESTART
EPAISSEUR DE COUCHE ACTIVE	ACTIVE LAYER THICKNESS
EPAISSEUR DE COUCHE ACTIVE CONSTANTE	CONSTANT ACTIVE LAYER THICKNESS

EPAISSEURS INITIALES PAR COUCHE	LAYERS INITIAL THICKNESS
FACTEUR MORPHOLOGIQUE	MORPHOLOGICAL FACTOR
FICHIER DE COORDONNEES DES SERIES TEMPORELLES	TIME SERIES COORDINATES FILE
FICHIER DE COURANTS SECONDAIRES	SECONDARY CURRENTS FILE
FICHIER DE FLUXLINE	FLUXLINE INPUT FILE
FICHIER DE GEOMETRIE	GEOMETRY FILE
FICHIER DE HOULE	WAVE FILE
FICHIER DE NESTOR ACTION	NESTOR ACTION FILE
FICHIER DE NESTOR DE SURFACE REFERENCE	NESTOR SURFACE REFERENCE FILE
FICHIER DE NESTOR POLYGON	NESTOR POLYGON FILE
FICHIER DE NESTOR RESTART	NESTOR RESTART FILE
FICHIER DE REFERENCE	REFERENCE FILE
FICHIER DES CONDITIONS AUX LIMITES	BOUNDARY CONDITIONS FILE
FICHIER DES FONDS	BOTTOM TOPOGRAPHY FILE
FICHIER DES FRONTIERES POUR LE CHARRIAGE	BEDLOAD BOUNDARIES FILE
FICHIER DES PARAMETRES	STEERING FILE
FICHIER DES RESULTATS	RESULTS FILE
FICHIER DES RESULTATS C-VSM	C-VSM RESULTS FILE
FICHIER DES SECTIONS DE CONTROLE	SECTIONS INPUT FILE
FICHIER DES SERIES TEMPORELLES	TIME SERIES FILE
FICHIER FORTRAN	FORTRAN FILE
FICHIER POUR SUITE	RESTART FILE
FICHIER PRECEDENT SEDIMENTOLOGIQUE	PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE
FLOCULATION	FLOCCULATION
FLUXLINE	FLUXLINE
FORMAT DU FICHIER DE GEOMETRIE	GEOMETRY FILE FORMAT
FORMAT DU FICHIER DE HOULE	WAVE FILE FORMAT
FORMAT DU FICHIER DE REFERENCE	REFERENCE FILE FORMAT
FORMAT DU FICHIER DES C-VSM RESULTATS	C-VSM RESULTS FILE FORMAT
FORMAT DU FICHIER DES RESULTATS	RESULTS FILE FORMAT
FORMAT DU FICHIER DES SERIES TEMPORELLES	TIME SERIES FILE FORMAT
FORMAT DU FICHIER POUR SUITE	RESTART FILE FORMAT
FORMAT DU FICHIER PRECEDENT SEDIMENTOLOGIQUE	PREVIOUS SEDIMENTOLOGICAL COMPUTATION FILE FORMAT
FORMULE DE TRANSPORT POUR TOUS LES SABLES	SUSPENSION TRANSPORT FORMULA FOR ALL SANDS
FORMULE DE TRANSPORT SOLIDE POUR TOUS LES SABLES	BED-LOAD TRANSPORT FORMULA FOR ALL SANDS
FORMULE POUR EFFET DE PENTE	FORMULA FOR SLOPE EFFECT
FORMULE POUR FLOCULATION	FLOCCULATION FORMULA
FORMULE POUR LA DEVIATION	FORMULA FOR DEVIATION

FORMULE POUR VITESSE DE CHUTE ENTRAVEE	HINDERED SETTLING FORMULA
FRACTION INITIALE PAR CLASSE	CLASSES INITIAL FRACTION
GLISSEMENT DU SEDIMENT	SEDIMENT SLIDE
HIDING FACTOR FORMULA	HIDING FACTOR FORMULA
HIDING FACTOR PAR CLASSE	CLASSES HIDING FACTOR
LONGUEUR DU VECTEUR	VECTOR LENGTH
MASSE VOLUMIQUE DU SEDIMENT PAR CLASSE	CLASSES SEDIMENT DENSITY
MAXIMUM D'ITERATIONS POUR LE SOLVEUR POUR LA SUSPENSION	MAXIMUM NUMBER OF ITERATIONS FOR SOLVER FOR SUSPENSION
MAXIMUM D'ITERATIONS POUR LES EPAISSEURS POSITIVES	MAXIMUM NUMBER OF ITERATIONS FOR POSITIVE THICKNESS
MODE SUITE	RESTART MODE
MODELE DE LIT	BED MODEL
MPM COEFFICIENT	MPM COEFFICIENT
NESTOR	NESTOR
NOMBRE DE COUCHES POUR LE TASSEMENT	NUMBER OF LAYERS OF THE CONSOLIDATION MODEL
NOMBRE DE COUCHES POUR STRATIFICATION INITIALE	NUMBER OF LAYERS FOR INITIAL STRATIFICATION
NOMBRE DE TABLEAUX PRIVES	NUMBER OF PRIVATE ARRAYS
NOMBRE MAXIMUM DE FRONTIERES	MAXIMUM NUMBER OF BOUNDARIES
NOMS DES VARIABLES PRIVEES	NAMES OF PRIVATE VARIABLES
NUMERO DE L'ENREGISTREMENT DANS LE FICHIER POUR SUITE	RECORD NUMBER IN RESTART FILE
NUMERO DE VERSION	RELEASE
OPTION DE TRAITEMENT DES BANCS DECOUVRANTS	OPTION FOR THE TREATMENT OF TIDAL FLATS
OPTION DU PREDICTEUR DE RUGOSITE	BED ROUGHNESS PREDICTOR OPTION
OPTION DU SCHEMA POUR LA CONVECTION DES SEDIMENTS EN SUSPENSION	SCHEME OPTION FOR ADVECTION OF SUSPENDED SEDIMENTS
OPTION DU SOLVEUR POUR LA DIFFUSION DE LA SUSPENSION	SOLVER OPTION FOR DIFFUSION OF SUSPENSION
PARAMETRE POUR LA DEVIATION	PARAMETER FOR DEVIATION
PARAMETRES DE SHIELDS PAR CLASSE	CLASSES SHIELDS PARAMETERS
PERIODE DE SORTIE LISTING	LISTING PRINTOUT PERIOD
PERIODE POUR LES SORTIES DU FICHIER POUR SUITE	RESTART FILE PRINTOUT PERIOD
POROSITE DU LIT NON COHESIF PAR COUCHE	LAYERS NON COHESIVE BED POROSITY
PRECISION POUR LA DIFFUSION DE LA SUSPENSION	ACCURACY FOR DIFFUSION OF SUSPENSION
PRECONDITIONNEMENT POUR LA DIFFUSION DE LA SUSPENSION	PRECONDITIONING FOR DIFFUSION OF SUSPENSION
PRISE EN COMPTE DE LA HOULE	EFFECT OF WAVES
PROCESSEURS PARALLELES	PARALLEL PROCESSORS

PRODUIT MATRICE-VECTEUR	MATRIX-VECTOR PRODUCT
PROFILS DES SEDIMENTS EN SUSPENSION SUR LA VERTICALE	VERTICAL PROFILES OF SUSPENDED SEDIMENTS
PROFONDEUR MINIMUM POUR LE CHARRIAGE	MINIMUM DEPTH FOR BEDLOAD
RATIO ENTRE LA RUGOSITE DE PEAU ET LE DIAMETRE MOYEN	RATIO BETWEEN SKIN FRICTION AND MEAN DIAMETER
SCHEMA DE CONVECTION DIFFUSION AVEC VITESSE DE CHUTE	ADVECTION-DIFFUSION SCHEME WITH SETTLING VELOCITY
SCHEMA POUR LA CONVECTION DES SEDIMENTS EN SUSPENSION	SCHEME FOR ADVECTION OF SUSPENDED SEDIMENTS
SCHEMA POUR LA DIFFUSION DES SEDIMENTS EN SUSPENSION EN 3D	SCHEME FOR DIFFUSION OF SUSPENDED SEDIMENTS IN 3D
SCHEMA VOLUMES FINIS POUR LA DIFFUSION DES SEDIMENTS	FINITE VOLUME SCHEME FOR SUSPENDED SEDIMENTS DIFFUSION
SECONDARY CURRENTS ALPHA COEFFICIENT	SECONDARY CURRENTS ALPHA COEFFICIENT
SECTIONS DE CONTROLE	CONTROL SECTIONS
SECTIONS OUTPUT FILE	SECTIONS OUTPUT FILE
SETTLING LAG	SETTLING LAG
SOLVEUR POUR LA DIFFUSION DE LA SUSPENSION	SOLVER FOR DIFFUSION OF SUSPENSION
STOCKAGE DES MATRICES	MATRIX STORAGE
SUITE DE CALCUL	COMPUTATION CONTINUED
SUSPENSION POUR TOUS LES SABLES	SUSPENSION FOR ALL SANDS
TEMPS DE SORTIE CORRESPONDANT AU FACTEUR MORPHOLOGIQUE	OUTPUT TIME ACCORDING TO MORPHOLOGICAL FACTOR
TEMPS DE SPINUP POUR LA MISE A JOUR DU LIT	SPINUP TIME FOR BED UPDATING
TITRE	TITLE
TRANSFERT DE MASSE PAR COUCHE	LAYERS MASS TRANSFER
TYPE DE HOULE	TYPE OF WAVES
TYPE DE SEDIMENT PAR CLASSE	CLASSES TYPE OF SEDIMENT
VALEUR MINIMUM DE H	MINIMAL VALUE OF THE WATER HEIGHT
VALEURS DES SEDIMENTS EN SUSPENSION DES SOURCES	SUSPENDED SEDIMENTS CONCENTRATION VALUES AT THE SOURCES
VALEURS IMPOSEES DES CONCENTRATIONS DES SEDIMENTS EN SUSPENSION	PRESCRIBED SUSPENDED SEDIMENTS CONCENTRATION VALUES
VALEURS INITIALES DE CONCENTRATION DES SEDIMENTS EN SUSPENSION	INITIAL SUSPENDED SEDIMENTS CONCENTRATION VALUES
VALIDATION	VALIDATION
VARIABLES A IMPRIMER	VARIABLES TO BE PRINTED
VARIABLES POUR LES SORTIES GRAPHIQUES	VARIABLES FOR GRAPHIC PRINTOUTS
VERIFICATION DU MAILLAGE	CHECKING THE MESH
VERTICAL GRAIN SORTING MODEL	VERTICAL GRAIN SORTING MODEL
VISCOSITE CINEMATIQUE EAU	WATER VISCOSITY
VITESSE DE CHUTE ENTRAVEE	HINDERED SETTLING
VITESSES DE CHUTE PAR CLASSE	CLASSES SETTLING VELOCITIES

VOLUMES FINIS	FINITE VOLUMES
ZERO	ZERO

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[1] J-M. HERVOUET. *Hydrodynamics of free surface flows. Modelling with the finite element method.* John Wiley & Sons, Ltd, Paris, 2007.