WAQTEL

Reference Manual

Contents

1. Detail list of keywords

1.1 AED2 BIVALVE STEERING FILE

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQAED2B)
DEFAULT VALUE :	''
French keyword :	FICHIER DES PARAMETRES BIVALVES AED2

Name of the file containing AED2 bivalve parameters of the WAQ computation.

1.2 AED2 PATHOGEN STEERING FILE

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQAED2PT)
DEFAULT VALUE :	''
French keyword :	FICHIER DES PARAMETRES PATHOGENES AED2

Name of the file containing AED2 pathogen parameters of the WAQ computation.

1.3 AED2 PHYTOPLANKTON STEERING FILE

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQAED2P)
DEFAULT VALUE :	''
French keyword :	FICHIER DES PARAMETRES PHYTOPLANCTON AED2

Name of the file containing AED2 phytoplankton parameters of the WAQ computation.

1.4 AED2 STEERING FILE

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQAED2)
DEFAULT VALUE :	''
French keyword :	FICHIER DES PARAMETRES AED2

Name of the file containing AED2 parameters of the WAQ computation.

1.5 AED2 ZOOPLANKTON STEERING FILE

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQAED2Z)
DEFAULT VALUE :	"
French keyword :	`FICHIER DES PARAMETRES ZOOPLANCTON AED2`

Name of the file containing AED2 zooplankton parameters of the WAQ computation.

1.6 AIR SPECIFIC HEAT

Type :	Real
Dimension :	0
Mnemo	CP_AIR
DEFAULT VALUE :	1005.
French keyword :	`CHALEUR SPECIFIQUE DE L'AIR`

In J/kg/°C. For THERMIC only.

1.7 ALGAL TOXICITY COEFFICIENTS

Type :	Real
Dimension :	2
Mnemo	CTOXIC
DEFAULT VALUE :	1.;0.
French keyword :	`COEFFICIENTS DE TOXICITE POUR LES ALGUES`

α_1 and α_2 in the documentation. $\alpha_i = 1$ means no toxicity. For EUTRO+BIOMASS.

1.8 ATMOSPHERE-WATER EXCHANGE MODEL

Type :	Integer
Dimension :	0
Mnemo	ATMOSEXCH
DEFAULT VALUE :	0
French keyword :	`MODELE D'ECHANGES EAU-ATMOSPHERE`

Choice of the atmosphere-water exchange model.

- 0: no model (default),

- 1: linearised formula at the free surface,

- 2: model with complete balance.

In 2D, if another processus than THERMIC, mandatory to let to 0.

1.9 BENTHIC DEMAND

Type :	Real
Dimension :	0
Mnemo	DEMBEN
DEFAULT VALUE :	0.1
French keyword :	`DEMANDE BENTHIQUE`

In gO$_2$/m^2/d. Variable *BEN* in the documentation. For EUTRO+O2.

1.10   BOUNDARY CONDITIONS FILE

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQCLI)
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 boundary nodes.

1.11   COEFFICIENT 1 FOR LAW OF TRACERS DEGRADATION

Type :	Real
Dimension :	2
Mnemo	COEF1TRAC
DEFAULT VALUE :	MANDATORY
French keyword :	COEFFICIENT 1 DE LA LOI DE DEGRADATION DES TRACEURS

Coefficient 1 of law for tracers decrease. Check also the relation between the keywords NAMES OF TRACERS and LAW OF TRACERS DEGRADATION.

1.12   COEFFICIENT OF CLOUDING RATE

Type :	Real
Dimension :	1
Mnemo	COEF_K
DEFAULT VALUE :	0.17
French keyword :	COEFFICIENT REPRESENTATIF DE LA COUVERTURE NUAGEUSE

Coefficient depending on the type of clouds:

- Cirrus = 0.04,

- Cirro stratus = 0.08,

- Alto cumulus = 0.17,

- Alto stratus = 0.2,

- Stratus = 0.24.

Alto Cumulus (mean value) is usually used (T.V.A. 1972), default value in 3D. In 3D, only used with Swinbank formula (1963) for the computation of the atmospheric radiation. Variable k in the documentation. For THERMIC only. Old default value = 0.2 until release V8P1.

1.13   COEFFICIENT OF DISTRIBUTION

Type :	Real
Dimension :	0
Mnemo	CDISTRIB
DEFAULT VALUE :	1775.
French keyword :	COEFFICIENT DE DISTRIBUTION

In m^3/kg or l/g. Variable K_d in the documentation. For MICROPOL only.

1.14   COEFFICIENT OF DISTRIBUTION 2

Type :	Real
Dimension :	0
Mnemo	CDISTRIB2
DEFAULT VALUE :	1775.
French keyword :	COEFFICIENT DE DISTRIBUTION 2

Dimensionless. Variable K_{d2} in the documentation. For MICROPOL only.

1.15   COEFFICIENT TO CALIBRATE THE ATMOSPHERE-WATER EXCHANGE MODEL

Type :	Real
Dimension :	0
Mnemo	C_ATMOS
DEFAULT VALUE :	0.0025
French keyword :	COEFFICIENT DE CALAGE DU MODELE D'ECHANGES EAU-ATMOSPHERE

Value of the calibration coefficient for the wind function of the atmosphere-water exchange models (linearised formula at the free surface or complete balance). A value between 0.0017 and 0.0035 is advised. Only for THERMIC 3D.

1.16   COEFFICIENTS A AND B FOR RS FORMULA

Type :	Real
Dimension :	2
Mnemo	ABRS
DEFAULT VALUE :	1.2;0.7
French keyword :	COEFFICIENTS A ET B POUR LA FORMULE DE RS

Coefficients needed for the calculation of RS: a is between 0.65 (very polluted water and 1.8 (very clear water) and b varies a lot (see array in the documentation). Read but not used at the moment.

1.17   COEFFICIENTS FOR CALIBRATING ATMOSPHERIC RADIATION

Type :	Real
Dimension :	1
Mnemo	EMA
DEFAULT VALUE :	0.97
French keyword :	COEFFICIENTS DE CALAGE DU RAYONNEMENT ATMOSPHERIQUE

Variable e_{air} in 2D or $(1-alb_{lw})$ in 3D in the documentation. For THERMIC only.

1.18   COEFFICIENTS FOR CALIBRATING SURFACE WATER RADIATION

Type :	Real
Dimension :	1
Mnemo	EMI_EAU
DEFAULT VALUE :	0.97
French keyword :	COEFFICIENTS DE CALAGE DU RAYONNEMENT DU PLAN D'EAU

It depends on the location and the obstacles around the water. For a narrow river bordered with trees, it would be around 0.97 and for a widely oopen field, it would be around 0.92. Variable e_{eau} in the documentation. For THERMIC only.

1.19 COEFFICIENTS OF AERATION FORMULA

Type :   Real
Dimension :   2
Mnemo   CFAER
DEFAULT VALUE :   0.002;0.0012
French keyword :   COEFFICIENTS DE LA FORMULE D'AERATION

Couple of calibration coefficients for the wind function of the atmosphere-water exchange models. Their close values are around 0.0025.

1.20 COEFFICIENTS OF ALGAL MORTALITY AT 20C

Type :   Real
Dimension :   2
Mnemo   CMORALG
DEFAULT VALUE :   0.1;0.003
French keyword :   COEFFICIENTS DE MORTALITE ALGALE A 20C

Variables M_1 and M_2 in the documentation. For EUTRO+BIOMASS.

1.21 CONSTANT FOR THE NITRIFICATION KINETIC K520

Type :   Real
Dimension :   0
Mnemo   K520
DEFAULT VALUE :   0.35
French keyword :   CONSTANTE DE LA CINETIQUE DE NITRIFICATION K520

Constant for the nitrification kinetic at 20°C. In d^{-1}. For EUTRO only.

1.22 CONSTANT OF DEGRADATION OF ORGANIC LOAD K1

Type :   Real
Dimension :   0
Mnemo   K1
DEFAULT VALUE :   0.25
French keyword :   CONSTANTE DE DEGRADATION DE LA CHARGE ORGANIQUE K1

In d^{-1}. For O2 only.

1.23 CONSTANT OF DEGRADATION OF ORGANIC LOAD K120

Type :   Real
Dimension :   0
Mnemo   K120
DEFAULT VALUE :   0.35
French keyword :   CONSTANTE DE DEGRADATION DE LA CHARGE ORGANIQUE K120

Constant of degradation kinetic of organic load at 20°C. In d^{-1}. For EUTRO only.

1.24 CONSTANT OF DESORPTION KINETIC

Type :   Real
Dimension :   0
Mnemo   KDESORP
DEFAULT VALUE :   2.5E-7
French keyword :   CONSTANTE CINETIQUE DE DESORPTION

In s^{-1}. Variable k_{-1} in the documentation. For MICROPOL only.

1.25 CONSTANT OF DESORPTION KINETIC 2

Type :   Real
Dimension :   0
Mnemo   KDESORP2
DEFAULT VALUE :   2.5E-9
French keyword :   CONSTANTE CINETIQUE DE DESORPTION 2

In s^{-1}. Variable k_{-2} in the documentation. For MICROPOL only.

1.26 CONSTANT OF HALF-SATURATION WITH NITROGEN

Type :   Real
Dimension :   0
Mnemo   KN
DEFAULT VALUE :   0.03
French keyword :   CONSTANTE DE DEMI-SATURATION EN AZOTE

In mgN/l. Around 0.03 mgN/l. For EUTRO+BIOMASS.

1.27 CONSTANT OF HALF-SATURATION WITH PHOSPHATE

Type :   Real
Dimension :   0
Mnemo   KP
DEFAULT VALUE :   0.005
French keyword :   CONSTANTE DE DEMI-SATURATION EN PHOSPHATE

In mgP/l. Around 0.005 mgP/l. For EUTRO+BIOMASS.

1.28 CONSTANT OF NITRIFICATION KINETIC K4

Type :   Real
Dimension :   0
Mnemo   K44
DEFAULT VALUE :   0.35
French keyword :   CONSTANTE DE CINETIQUE DE NITRIFICATION K4

In d^{-1}. For O2 only.

1.29 CONSUMED OXYGEN BY NITRIFICATION

Type :   Real
Dimension :   0
Mnemo   O2NITRI
DEFAULT VALUE :   5.2
French keyword :   OXYGENE CONSOMME PAR NITRIFICATION

In $mgO_2/mgNH_4$. Variable n in the documentation. For EUTRO only.

1.30 CRITICAL STRESS OF RESUSPENSION

Type :   Real
Dimension :   0
Mnemo   TAUR
DEFAULT VALUE :   1000.
French keyword :   CONTRAINTE CRITIQUE DE REMISE EN SUSPENSION

Sedimentation critical shear stress in Pa. Variable τ_r in the documentation. For MICROPOL only.

1.31 DEBUGGER

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

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

1.32 DICTIONARY

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

Key word dictionary.

1.33 DISPERSION ACROSS THE FLOW

Type :   Real
Dimension :   0
Mnemo   TDISP
DEFAULT VALUE :   1.E-2
French keyword :   DISPERSION TRANSVERSALE

Read but not used at the moment.

1.34 DISPERSION ALONG THE FLOW

Type :   Real
Dimension :   0
Mnemo   LDISP
DEFAULT VALUE :   1.E-2
French keyword :   DISPERSION LONGITUDINALE

Read but not used at the moment.

1.35 EROSION RATE

Type :   Real
Dimension :   0
Mnemo   ERO
DEFAULT VALUE :   0.
French keyword :   TAUX D'EROSION

Characteristic erosion rate of deposited SPM or also called Partheniades s constant. Variable *e* in the documentation. For MICROPOL only.

1.36 EVAPORATION RATE

Type :	Real
Dimension :	0
Mnemo	EVAPORATION
DEFAULT VALUE :	0.
French keyword :	`TAUX D'EVAPORATION`

Rate of evaporation - same unit as rainfall in $m^3/s/m^2$.

1.37 EXPONENTIAL DESINTEGRATION CONSTANT

Type :	Real
Dimension :	0
Mnemo	CCSEDIM
DEFAULT VALUE :	1.13E-7
French keyword :	`CONSTANTE DE DESINTEGRATION EXPONENTIELLE`

In s^{-1}, exponential decrease law like the one of radioactivity. Variable *L* in the documentation. For MICROPOL only.

1.38 FORMULA FOR COMPUTING CS

Type :	Integer
Dimension :	0
Mnemo	FORMCS
DEFAULT VALUE :	0
French keyword :	`FORMULE DE CALCUL DE CS`

In d^{-1}, here are the available options:

- 0: constant,

- 1: Elmore & Hayes formula,

- 2: Montgomery formula,

- 3: Benson & Krause formula (1984).

For EUTRO+O2.

1.39 FORMULA FOR COMPUTING K2

Type :	Integer
Dimension :	0
Mnemo	FORMK2
DEFAULT VALUE :	1
French keyword :	`FORMULE DE CALCUL DE K2`

Gives how to compute the reaeration coefficient k_2 options are:

- 0: k_2 constant, in this case $k_2 = 0.9$,

- 1: formula of The Tenessee Valley Authority,

- 2: formula of Owens et al.,

- 3: formula of Churchill et al.,

- 4: formula of O Connor & Dobbins,

- 5: formula combining the formulae 2, 3 et 4.

For EUTRO+O2.

1.40 FORMULA FOR COMPUTING RS

Type :   Integer
Dimension :   0
Mnemo   FORMRS
DEFAULT VALUE :   0
French keyword :   `FORMULE DE CALCUL DE RS`
Gives how to cumpute the weir reaeration coefficient RS options are:

- 0: RS constant, in this case RS = 1.0,

- 1: formula of Gameson 1,

- 2: formula of Gameson 2,

- 3: formula of WRL1,

- 4: formula of WRL2.

Read but not used at the moment.

1.41 FORMULA OF ATMOSPHERIC RADIATION

Type :   Integer
Dimension :   1
Mnemo   IRAY_ATM
DEFAULT VALUE :   2
French keyword :   `FORMULE DU RAYONNEMENT ATMOSPHERIQUE`
Formula to be chosen to compute the atmospheric radiation. See GLM.

- 1: Idso and Jackson (1969),

- 2: Swibank (1963), default,

- 3: Brutsaert (1975),

- 4: Yajima Tono Dam (2014).

Only for THERMIC 3D.

1.42 FORTRAN FILE

Type :   String
Dimension :   1
Mnemo   NOMFOR
DEFAULT VALUE :   ''
French keyword :   `FICHIER FORTRAN`
Name of FORTRAN file to be submitted.

1.43 GEOMETRY FILE

Type :	String
Dimension :	0
Mnemo	WAQ_FILES(WAQGEO)
DEFAULT VALUE :	''
French keyword :	FICHIER DE GEOMETRIE

Geometry file same as the TELEMAC one.

1.44 GEOMETRY FILE FORMAT

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQGEO)
DEFAULT VALUE :	'SERAFIN'
French keyword :	FORMAT DU FICHIER DE GEOMETRIE

Geometry file format. 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.

1.45 HYDRODYNAMIC FILE

Type :	String
Dimension :	0
Mnemo	WAQ_FILES(WAQHYD)
DEFAULT VALUE :	''
French keyword :	FICHIER HYDRODYNAMIQUE

Hydrodynamic data file coming from TELEMAC. Read but not used at the moment.

1.46 HYDRODYNAMIC FILE FORMAT

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQHYD)
DEFAULT VALUE :	'SERAFIN'
French keyword :	FORMAT DU FICHIER HYDRODYNAMIQUE

Hydrodynamic file format. 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.

1.47 K2 REAERATION COEFFICIENT

Type :	Real
Dimension :	0
Mnemo	K22
DEFAULT VALUE :	0.9
French keyword :	COEFFICIENT DE REAERATION K2

In d^{-1}. Value between 0.1 and > 1.15 d^{-1}. Variable k_2 in the documentation. For EUTRO+O2.

1.48 KINEMATIC WATER VISCOSITY

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

Specifies the water kinematic viscosity. En m/s^2. Read but not used at the moment.

1.49 KINETIC EXCHANGE MODEL

Type :   Integer
Dimension :   1
Mnemo   KIN_MICROPOL
DEFAULT VALUE :   1
French keyword :   `MODELE D'ECHANGES CINETIQUES`

Choice of the micropollutant-sediment exchange model.

- 1: one-step reversible kinetic model (only one specific site for interactions with sediments),

- 2: two-steps reversible kinetic model (one weak bounding site and one strong bounding site).

1.50 LAW OF TRACERS DEGRADATION

Type :   Integer
Dimension :   2
Mnemo   LOITRAC
DEFAULT VALUE :   0;0
French keyword :   `LOI DE DEGRADATION DES TRACEURS`

Take in account a law for tracers decrease. Value 0 if not taken into account, 1 if law 1... For each value entered, a corresponding name should be present in the keyword `NAMES OF TRACERS`, so that the decrease law is applied to the correct tracer(s). Possible choices are:

- 0: no degradation,

- 1: law for bacterial degradation with T_{90} coefficient,

- 2: degradation law of first order, constant of tracer kinetic degradation in h^{-1},

- 3: degradation law of first order, constant of tracer kinetic degradation in d^{-1},

- 4: law implemented by user.

1.51 LIGHT EXTINCTION COEFFICIENT

Type :   Real
Dimension :   1
Mnemo   EXTINC
DEFAULT VALUE :   0.2
French keyword :   `COEFFICIENT D EXTINCTION DE LA LUMIERE`

In m^{-1}. Used for EUTRO+BIOMAS, and THERMIC in 3D.

1.52 LIGHTNESS OF THE SKY

Type :	Integer
Dimension :	1
Mnemo	ISKYTYPE
DEFAULT VALUE :	2
French keyword :	CLARTE DU CIEL

How the sky is bright (pure). Possible choices are:

- very bright, pure sky,

- moderately bright sky,

- foggy like the sky of industrial area.

For THERMIC in 3D only.

1.53 MASS-BALANCE

Type :	Logical
Dimension :	1
Mnemo	WQBILMAS
DEFAULT VALUE :	NO
French keyword :	BILAN DE MASSE

Determines whether a check of the mass-balance over the domain is made or not. Read but not used at the moment.

1.54 MAXIMUM ALGAL GROWTH RATE AT 20C

Type :	Real
Dimension :	1
Mnemo	CMAX
DEFAULT VALUE :	2.
French keyword :	TAUX DE CROISSANCE ALGALE MAXIMUM A 20C

Maximum algal growth rate at 20°C. For EUTRO+BIOMASS.

1.55 METHOD OF COMPUTATION OF RAY EXTINCTION COEFFICIENT

Type :	Integer
Dimension :	1
Mnemo	MEXTINC
DEFAULT VALUE :	1
French keyword :	METHODE DE CALCUL DU COEFFICIENT D'EXTINCTION DU RAY

Choice of the method of calculation of the extinction of sun ray in water k_e in m^{-1}. The choices are :

- 1: Atkins formula (1.7/Secchi),

- 2: Moss formula if Secchi depth is unknown,

- 3: constant provided by the user with the keyword LIGHT EXTINCTION COEFFICIENT.

For EUTRO+BIOMASS and THERMIC in 3D.

1.56   O2 SATURATION DENSITY OF WATER (CS)

Type :   Real
Dimension :   0
Mnemo   O2SATU
DEFAULT VALUE :   11.
French keyword :   CONCENTRATION DE SATURATION EN O2 DE L'EAU (CS)
In mgO$_2$/l. Variable C_s = 9 mgO$_2$/l at 20°C. For EUTRO+O2.

1.57   OXYGEN PRODUCED BY PHOTOSYNTHESIS

Type :   Real
Dimension :   0
Mnemo   O2PHOTO
DEFAULT VALUE :   0.15
French keyword :   OXYGENE PRODUIT PAR PHOTOSYNTHESE
In mgO$_2$/μgChlA. Variable f in the documentation. For EUTRO only.

1.58   PARALLEL PROCESSORS

Type :   Integer
Dimension :   1
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.

1.59   PARAMETER OF CALIBRATION OF SMITH FORMULA

Type :   Real
Dimension :   0
Mnemo   IK
DEFAULT VALUE :   120.
French keyword :   PARAMETRE DE CALAGE DE LA FORMULE DE SMITH
In W/m^2. Around 100 W/m^2. For EUTRO+BIOMASS.

1.60   PERCENTAGE OF NITROGEN ASSIMILABLE IN DEAD PHYTO

Type :   Real
Dimension :   0
Mnemo   PERNITS
DEFAULT VALUE :   0.5
French keyword :   POURCENTAGE D'AZOTE ASSIMILABLE DANS LE PHYTO MORT
In %. Variable dtn in the documentation. For EUTRO+BIOMASS.

1.61   PERCENTAGE OF PHOSPHORUS ASSIMILABLE IN DEAD PHYTO

Type :   Real
Dimension :   0
Mnemo   DTP
DEFAULT VALUE :   0.5
French keyword :   POURCENTAGE DE PHOSPHORE ASSIMILABLE DANS LE PHYTO MORT

In %. For EUTRO+BIOMASS.

1.62   PHOTOSYNTHESIS P

Type :   Real
Dimension :   0
Mnemo   PHOTO
DEFAULT VALUE :   1.
French keyword :   PHOTOSYNTHESE P

In mgO$_2$/d/l. Variable P in the documentation. Between 0.3 and 9 mgO$_2$/d/l depending on the type of river. For EUTRO+O2.

1.63   PROPORTION OF NITROGEN WITHIN PHYTO CELLS

Type :   Real
Dimension :   0
Mnemo   PRONITC
DEFAULT VALUE :   0.0035
French keyword :   PROPORTION D'AZOTE DANS LES CELLULES DU PHYTO

In mgN/μgChlA. Variable fn in the documentation. For EUTRO+BIOMASS.

1.64   PROPORTION OF PHOSPHORUS WITHIN PHYTO CELLS

Type :   Real
Dimension :   0
Mnemo   PROPHOC
DEFAULT VALUE :   0.0025
French keyword :   PROPORTION DE PHOSPHORE DANS LES CELLULES DU PHYTO

In mgP/μgChlA. Variable fp in the documentation. For EUTRO+BIOMASS.

1.65   RATE OF TRANSFORMATION OF NOR TO NO3

Type :   Real
Dimension :   0
Mnemo   K360
DEFAULT VALUE :   0.
French keyword :   TAUX DE TRANSFORMATION DU NOR EN NO3

Rate of transformation of degradable and non assimilable nitrogen (NOR) to mineral dissolved assimilable nitrogen (NO3) by bacteria mineralization in d^{-1}. Variables k_2 for BIOMAS and k_{620} for EUTRO (at 20°C) in the documentation. For EUTRO+BIOMASS.

1.66   RATE OF TRANSFORMATION OF POR TO PO4

Type :	Real
Dimension :	0
Mnemo	K320
DEFAULT VALUE :	0.03
French keyword :	TAUX DE TRANSFORMATION DU POR EN PO4

Rate of transformation of degradable and non assimilable phosphorus (POR) to mineral dissolved assimilable phosphorus (PO4) by means of bacteria mineralization in d^{-1}. Variables k_1 for BIOMAS and k_{320} for EUTRO (at 20°C) in the documentation. For EUTRO+BIOMASS.

1.67   REFERENCE FILE

Type :	String
Dimension :	0
Mnemo	WAQ_FILES(WAQREF)
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 BIEF_VALIDA. (not implemented yet).

1.68   REFERENCE FILE FORMAT

Type :	String
Dimension :	1
Mnemo	WAQ_FILES(WAQREF)
DEFAULT VALUE :	'SERAFIN'
French keyword :	FORMAT DU FICHIER DE REFERENCE

Hydrodynamic file format. 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.

1.69   RESPIRATION RATE OF ALGAL BIOMASS

Type :	Real
Dimension :	0
Mnemo	TRESPIR
DEFAULT VALUE :	0.05
French keyword :	TAUX DE RESPIRATION DE LA BIOMASSE ALGALE

In d^{-1}, at 20°C. Variable RP in the documentation. For EUTRO+BIOMASS.

1.70   RESULTS FILE

Type :	String
Dimension :	0
Mnemo	WAQ_FILES(WAQRES)
DEFAULT VALUE :	'MANDATORY'
French keyword :	FICHIER DES RESULTATS

Name of the file into which the computation results will be written, the periodicity being given by the keyword WATER QUALITY PRINTOUT PERIOD.

1.71 RESULTS FILE FORMAT

Type :   String
Dimension :   1
Mnemo   WAQ_FILES(WAQRES)
DEFAULT VALUE :   'SERAFIN'
French keyword :   FORMAT DU FICHIER DES RESULTATS

Results file format. 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.

1.72 SECCHI DEPTH

Type :   Real
Dimension :   1
Mnemo   ZSD
DEFAULT VALUE :   0.9
French keyword :   PROFONDEUR DE SECCHI

In m. Used for EUTRO+BIOMAS, and THERMIC in 3D.

1.73 SEDIMENT SETTLING VELOCITY

Type :   Real
Dimension :   0
Mnemo   VITCHU_WAQ
DEFAULT VALUE :   6.E-6
French keyword :   VITESSE DE CHUTE DES MES

Sediment velocity in m/s. Variable w in the documentation. For MICROPOL only.

1.74 SEDIMENTATION CRITICAL STRESS

Type :   Real
Dimension :   0
Mnemo   TAUS
DEFAULT VALUE :   5.
French keyword :   CONTRAINTE CRITIQUE DE SEDIMENTATION

Sedimentation critical shear stress in Pa. For MICROPOL only.

1.75 SEDIMENTATION VELOCITY OF NON ALGAL NITROGEN

Type :   Real
Dimension :   0
Mnemo   WNOR
DEFAULT VALUE :   0.
French keyword :   VITESSE DE SEDIMENTATION DE L'AZOTE NON ALGAL

Sedimentation velocity of non algal organic nitrogen in m/s. For EUTRO+BIOMASS.

1.76   SEDIMENTATION VELOCITY OF ORGANIC LOAD

Type :   Real
Dimension :   0
Mnemo   WLOR
DEFAULT VALUE :   0.
French keyword :   VITESSE DE SEDIMENTATION DE LA CHARGE ORGANIQUE
In m/s. For EUTRO only.

1.77   SEDIMENTATION VELOCITY OF ORGANIC PHOSPHORUS

Type :   Real
Dimension :   0
Mnemo   WPOR
DEFAULT VALUE :   0.
French keyword :   VITESSE DE SEDIMENTATION DU PHOSPHORE ORGANIQUE
Sedimentation velocity of non algal organic phosphorus in m/s. For EUTRO+BIOMASS.

1.78   SOLAR RADIATION READ IN METEO FILE

Type :   Logical
Dimension :   1
Mnemo   SOLRADMETEO
DEFAULT VALUE :   NO
French keyword :   RAYONNEMENT SOLAIRE LU DANS LE FICHIER METEO
If solar radiation data is available, it can be read in the ASCII ATMOSPHERIC DATA FILE of
TELEMAC-2D or TELEMAC-3D instead of been computed by the heat exchange with atmo-
sphere module by activating this keyword to YES. For THERMIC in 3D only. This is mandatory
in 2D.

1.79   STEERING FILE

Type :   String
Dimension :   1
Mnemo
DEFAULT VALUE :   ''
French keyword :   FICHIER DES PARAMETRES
Name of the file containing parameters of the WAQ computation Written by the user.

1.80   SUNSHINE FLUX DENSITY ON WATER SURFACE

Type :   Real
Dimension :   1
Mnemo   I0
DEFAULT VALUE :   0.
French keyword :   DENSITE DE FLUX DU RAYONNEMENT SOLAIRE A LA SURFACE
Density of sunshine flux on the water surface in W/m^2. For EUTRO+BIOMASS.

1.81 VALIDATION

Type :   Logical
Dimension :   1
Mnemo   WQVALID
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. Read but not used at the moment.

1.82 VARIABLES FOR WAQ PRINTOUTS

Type :   String
Dimension :   1
Mnemo
DEFAULT VALUE :   ''
French keyword :   VARIABLES POUR LES SORTIES QE

Names of variables the user wants to write into the graphic results file. Does not seem to be used at the moment.

1.83 VEGETAL RESPIRATION R

Type :   Real
Dimension :   0
Mnemo   RESP
DEFAULT VALUE :   0.06
French keyword :   RESPIRATION VEGETALE R

In $mgO_2/d/l$. Variable R in the documentation. For O2 only.

1.84 VEGETAL TURBIDITY COEFFICIENT WITHOUT PHYTO

Type :   Real
Dimension :   0
Mnemo   KPE
DEFAULT VALUE :   0.
French keyword :   COEFFICIENT DE TURBIDITE VEGETALE SANS PHYTO

In m^{-1}. For EUTRO+BIOMASS.

1.85 WAQ CASE TITLE

Type :   String
Dimension :   1
Mnemo   TITWAQCAS
DEFAULT VALUE :   ''
French keyword :   TITRE DU CAS QE

Title of the case being considered. This title will be marked on the printouts.

1.86 WAQ VARIABLES TO BE PRINTED

Type :   String
Dimension :   1
Mnemo
DEFAULT VALUE :   ''
French keyword :   `VARIABLES QE 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. Does not seem to be used at the moment.

1.87 WATER DENSITY

Type :   Real
Dimension :   1
Mnemo   RO0
DEFAULT VALUE :   999.972
French keyword :   `MASSE VOLUMIQUE DE L'EAU`

Sets the value of water density.

1.88 WATER QUALITY PRINTOUT PERIOD

Type :   Integer
Dimension :   1
Mnemo   LEOPRD
DEFAULT VALUE :   1
French keyword :   `PERIODE POUR LES SORTIES QUALITE D'EAU`

Graphic outputs period for WAQ. Read but not used at the moment.

1.89 WATER SALINITY

Type :   Real
Dimension :   0
Mnemo   WATSAL
DEFAULT VALUE :   35.
French keyword :   `SALINITE DE L'EAU`

Mean salinity necessary for computing different values of C_s.

1.90 WATER SPECIFIC HEAT

Type :   Real
Dimension :   0
Mnemo   CP_EAU
DEFAULT VALUE :   4180.
French keyword :   `CHALEUR SPECIFIQUE DE L'EAU`

In J/kg/°C. For THERMIC only.

1.91   WATER TEMPERATURE

Type :   Real
Dimension :   0
Mnemo   WATTEMP
DEFAULT VALUE :   7.
French keyword :   `TEMPERATURE DE L'EAU`

In °C, mean temperature necessary for computing different values of C_s.

1.92   WEIR REAERATION COEFFICIENT RS

Type :   Real
Dimension :   0
Mnemo   RSW
DEFAULT VALUE :   1.0
French keyword :   `COEFFICIENT DE REAERATION DU SEUIL RS`

In d^{-1}. Read but not used at the moment.

2. List of keywords classified according to type

2.1 COMPUTATION ENVIRONMENT

2.1.1 GLOBAL

```
PARALLEL PROCESSORS
WAQ CASE TITLE
```

2.1.2 INPUT

AED2

```
AED2 BIVALVE STEERING FILE
AED2 PATHOGEN STEERING FILE
AED2 PHYTOPLANKTON STEERING FILE
AED2 STEERING FILE
AED2 ZOOPLANKTON STEERING FILE
```

DATA

```
BOUNDARY CONDITIONS FILE
FORTRAN FILE
GEOMETRY FILE
GEOMETRY FILE FORMAT
HYDRODYNAMIC FILE
HYDRODYNAMIC FILE FORMAT
REFERENCE FILE
REFERENCE FILE FORMAT
VALIDATION
```

2.1.3 OUTPUT

LISTING

```
MASS-BALANCE
WAQ VARIABLES TO BE PRINTED
```

RESULTS

```
RESULTS FILE
RESULTS FILE FORMAT
VARIABLES FOR WAQ PRINTOUTS
WATER QUALITY PRINTOUT PERIOD
```

2.2 GENERAL PARAMETERS

```
DEBUGGER
```

2.3 HYDRODYNAMICS

2.3.1 PHYSICAL PARAMETERS

```
KINEMATIC WATER VISCOSITY
WATER DENSITY
```

2.3.2 SUSPENSION

```
DISPERSION ACROSS THE FLOW
DISPERSION ALONG THE FLOW
```

2.4 INTERNAL

```
DICTIONARY
STEERING FILE
```

2.5 PHYSICAL PARAMETERS

```
EVAPORATION RATE
```

2.6 WAQ PARAMETERS

```
LIGHT EXTINCTION COEFFICIENT
METHOD OF COMPUTATION OF RAY EXTINCTION COEFFICIENT
SECCHI DEPTH
```

2.6.1 DEGRADATION

```
COEFFICIENT 1 FOR LAW OF TRACERS DEGRADATION
LAW OF TRACERS DEGRADATION
```

2.6.2 EUTROPHICATION

```
WATER SALINITY
WATER TEMPERATURE
```

EUTRO

```
CONSTANT FOR THE NITRIFICATION KINETIC K520
CONSTANT OF DEGRADATION OF ORGANIC LOAD K120
CONSUMED OXYGEN BY NITRIFICATION
OXYGEN PRODUCED BY PHOTOSYNTHESIS
SEDIMENTATION VELOCITY OF ORGANIC LOAD
```

EUTRO AND BIOMASS

```
ALGAL TOXICITY COEFFICIENTS
COEFFICIENTS OF ALGAL MORTALITY AT 20C
CONSTANT OF HALF-SATURATION WITH NITROGEN
CONSTANT OF HALF-SATURATION WITH PHOSPHATE
MAXIMUM ALGAL GROWTH RATE AT 20C
PARAMETER OF CALIBRATION OF SMITH FORMULA
PERCENTAGE OF NITROGEN ASSIMILABLE IN DEAD PHYTO
PERCENTAGE OF PHOSPHORUS ASSIMILABLE IN DEAD PHYTO
PROPORTION OF NITROGEN WITHIN PHYTO CELLS
PROPORTION OF PHOSPHORUS WITHIN PHYTO CELLS
RATE OF TRANSFORMATION OF NOR TO NO3
RATE OF TRANSFORMATION OF POR TO PO4
RESPIRATION RATE OF ALGAL BIOMASS
SEDIMENTATION VELOCITY OF NON ALGAL NITROGEN
SEDIMENTATION VELOCITY OF ORGANIC PHOSPHORUS
SUNSHINE FLUX DENSITY ON WATER SURFACE
VEGETAL TURBIDITY COEFFICIENT WITHOUT PHYTO
```

EUTRO AND O2

```
BENTHIC DEMAND
FORMULA FOR COMPUTING CS
FORMULA FOR COMPUTING K2
K2 REAERATION COEFFICIENT
O2 SATURATION DENSITY OF WATER (CS)
PHOTOSYNTHESIS P
```

O2

```
CONSTANT OF DEGRADATION OF ORGANIC LOAD K1
CONSTANT OF NITRIFICATION KINETIC K4
VEGETAL RESPIRATION R
```

SOURCES

```
COEFFICIENTS A AND B FOR RS FORMULA
FORMULA FOR COMPUTING RS
```

```
WEIR REAERATION COEFFICIENT RS
```

2.6.3   MICROPOL

```
COEFFICIENT OF DISTRIBUTION
COEFFICIENT OF DISTRIBUTION 2
CONSTANT OF DESORPTION KINETIC
CONSTANT OF DESORPTION KINETIC 2
CRITICAL STRESS OF RESUSPENSION
EROSION RATE
EXPONENTIAL DESINTEGRATION CONSTANT
KINETIC EXCHANGE MODEL
SEDIMENT SETTLING VELOCITY
SEDIMENTATION CRITICAL STRESS
```

2.6.4   THERMIC

```
AIR SPECIFIC HEAT
ATMOSPHERE-WATER EXCHANGE MODEL
COEFFICIENT OF CLOUDING RATE
COEFFICIENT TO CALIBRATE THE ATMOSPHERE-WATER EXCHANGE MODEL
COEFFICIENTS FOR CALIBRATING ATMOSPHERIC RADIATION
COEFFICIENTS FOR CALIBRATING SURFACE WATER RADIATION
COEFFICIENTS OF AERATION FORMULA
FORMULA OF ATMOSPHERIC RADIATION
LIGHTNESS OF THE SKY
SOLAR RADIATION READ IN METEO FILE
WATER SPECIFIC HEAT
```

3. Glossary

3.1 English/French glossary

AED2 BIVALVE STEERING FILE	FICHIER DES PARAMETRES BIVALVES AED2
AED2 PATHOGEN STEERING FILE	FICHIER DES PARAMETRES PATHOGENES AED2
AED2 PHYTOPLANKTON STEERING FILE	FICHIER DES PARAMETRES PHYTOPLANCTON AED2
AED2 STEERING FILE	FICHIER DES PARAMETRES AED2
AED2 ZOOPLANKTON STEERING FILE	FICHIER DES PARAMETRES ZOOPLANCTON AED2
AIR SPECIFIC HEAT	CHALEUR SPECIFIQUE DE L'AIR
ALGAL TOXICITY COEFFICIENTS	COEFFICIENTS DE TOXICITE POUR LES ALGUES
ATMOSPHERE-WATER EXCHANGE MODEL	MODELE D'ECHANGES EAU-ATMOSPHERE
BENTHIC DEMAND	DEMANDE BENTHIQUE
BOUNDARY CONDITIONS FILE	FICHIER DES CONDITIONS AUX LIMITES
COEFFICIENT 1 FOR LAW OF TRACERS DEGRADATION	COEFFICIENT 1 DE LA LOI DE DEGRADATION DES TRACEURS
COEFFICIENT OF CLOUDING RATE	COEFFICIENT REPRESENTATIF DE LA COUVERTURE NUAGEUSE
COEFFICIENT OF DISTRIBUTION	COEFFICIENT DE DISTRIBUTION
COEFFICIENT OF DISTRIBUTION 2	COEFFICIENT DE DISTRIBUTION 2
COEFFICIENT TO CALIBRATE THE ATMOSPHERE-WATER EXCHANGE MODEL	COEFFICIENT DE CALAGE DU MODELE D'ECHANGES EAU-ATMOSPHERE
COEFFICIENTS A AND B FOR RS FORMULA	COEFFICIENTS A ET B POUR LA FORMULE DE RS
COEFFICIENTS FOR CALIBRATING ATMOSPHERIC RADIATION	COEFFICIENTS DE CALAGE DU RAYONNEMENT ATMOSPHERIQUE
COEFFICIENTS FOR CALIBRATING SURFACE WATER RADIATION	COEFFICIENTS DE CALAGE DU RAYONNEMENT DU PLAN D'EAU
COEFFICIENTS OF AERATION FORMULA	COEFFICIENTS DE LA FORMULE D'AERATION

COEFFICIENTS OF ALGAL MORTALITY AT 20C	COEFFICIENTS DE MORTALITE ALGALE A 20C
CONSTANT FOR THE NITRIFICATION KINETIC K520	CONSTANTE DE LA CINETIQUE DE NITRIFICATION K520
CONSTANT OF DEGRADATION OF ORGANIC LOAD K1	CONSTANTE DE DEGRADATION DE LA CHARGE ORGANIQUE K1
CONSTANT OF DEGRADATION OF ORGANIC LOAD K120	CONSTANTE DE DEGRADATION DE LA CHARGE ORGANIQUE K120
CONSTANT OF DESORPTION KINETIC	CONSTANTE CINETIQUE DE DESORPTION
CONSTANT OF DESORPTION KINETIC 2	CONSTANTE CINETIQUE DE DESORPTION 2
CONSTANT OF HALF-SATURATION WITH NITROGEN	CONSTANTE DE DEMI-SATURATION EN AZOTE
CONSTANT OF HALF-SATURATION WITH PHOSPHATE	CONSTANTE DE DEMI-SATURATION EN PHOSPHATE
CONSTANT OF NITRIFICATION KINETIC K4	CONSTANTE DE CINETIQUE DE NITRIFICATION K4
CONSUMED OXYGEN BY NITRIFICATION	OXYGENE CONSOMME PAR NITRIFICATION
CRITICAL STRESS OF RESUSPENSION	CONTRAINTE CRITIQUE DE REMISE EN SUSPENSION
DEBUGGER	DEBUGGER
DICTIONARY	DICTIONNAIRE
DISPERSION ACROSS THE FLOW	DISPERSION TRANSVERSALE
DISPERSION ALONG THE FLOW	DISPERSION LONGITUDINALE
EROSION RATE	TAUX D'EROSION
EVAPORATION RATE	TAUX D'EVAPORATION
EXPONENTIAL DESINTEGRATION CONSTANT	CONSTANTE DE DESINTEGRATION EXPONENTIELLE
FORMULA FOR COMPUTING CS	FORMULE DE CALCUL DE CS
FORMULA FOR COMPUTING K2	FORMULE DE CALCUL DE K2
FORMULA FOR COMPUTING RS	FORMULE DE CALCUL DE RS
FORMULA OF ATMOSPHERIC RADIATION	FORMULE DU RAYONNEMENT ATMOSPHERIQUE
FORTRAN FILE	FICHIER FORTRAN
GEOMETRY FILE	FICHIER DE GEOMETRIE
GEOMETRY FILE FORMAT	FORMAT DU FICHIER DE GEOMETRIE
HYDRODYNAMIC FILE	FICHIER HYDRODYNAMIQUE
HYDRODYNAMIC FILE FORMAT	FORMAT DU FICHIER HYDRODYNAMIQUE
K2 REAERATION COEFFICIENT	COEFFICIENT DE REAERATION K2
KINEMATIC WATER VISCOSITY	VISCOSITE CINEMATIQUE EAU
KINETIC EXCHANGE MODEL	MODELE D'ECHANGES CINETIQUES
LAW OF TRACERS DEGRADATION	LOI DE DEGRADATION DES TRACEURS
LIGHT EXTINCTION COEFFICIENT	COEFFICIENT D EXTINCTION DE LA LUMIERE
LIGHTNESS OF THE SKY	CLARTE DU CIEL
MASS-BALANCE	BILAN DE MASSE
MAXIMUM ALGAL GROWTH RATE AT 20C	TAUX DE CROISSANCE ALGALE MAXIMUM A 20C

METHOD OF COMPUTATION OF RAY EXTINCTION COEFFICIENT	METHODE DE CALCUL DU COEFFICIENT D'EXTINCTION DU RAY
O2 SATURATION DENSITY OF WATER (CS)	CONCENTRATION DE SATURATION EN O2 DE L'EAU (CS)
OXYGEN PRODUCED BY PHOTOSYNTHESIS	OXYGENE PRODUIT PAR PHOTOSYNTHESE
PARALLEL PROCESSORS	PROCESSEURS PARALLELES
PARAMETER OF CALIBRATION OF SMITH FORMULA	PARAMETRE DE CALAGE DE LA FORMULE DE SMITH
PERCENTAGE OF NITROGEN ASSIMILABLE IN DEAD PHYTO	POURCENTAGE D'AZOTE ASSIMILABLE DANS LE PHYTO MORT
PERCENTAGE OF PHOSPHORUS ASSIMILABLE IN DEAD PHYTO	POURCENTAGE DE PHOSPHORE ASSIMILABLE DANS LE PHYTO MORT
PHOTOSYNTHESIS P	PHOTOSYNTHESE P
PROPORTION OF NITROGEN WITHIN PHYTO CELLS	PROPORTION D'AZOTE DANS LES CELLULES DU PHYTO
PROPORTION OF PHOSPHORUS WITHIN PHYTO CELLS	PROPORTION DE PHOSPHORE DANS LES CELLULES DU PHYTO
RATE OF TRANSFORMATION OF NOR TO NO3	TAUX DE TRANSFORMATION DU NOR EN NO3
RATE OF TRANSFORMATION OF POR TO PO4	TAUX DE TRANSFORMATION DU POR EN PO4
REFERENCE FILE	FICHIER DE REFERENCE
REFERENCE FILE FORMAT	FORMAT DU FICHIER DE REFERENCE
RESPIRATION RATE OF ALGAL BIOMASS	TAUX DE RESPIRATION DE LA BIOMASSE ALGALE
RESULTS FILE	FICHIER DES RESULTATS
RESULTS FILE FORMAT	FORMAT DU FICHIER DES RESULTATS
SECCHI DEPTH	PROFONDEUR DE SECCHI
SEDIMENT SETTLING VELOCITY	VITESSE DE CHUTE DES MES
SEDIMENTATION CRITICAL STRESS	CONTRAINTE CRITIQUE DE SEDIMENTATION
SEDIMENTATION VELOCITY OF NON ALGAL NITROGEN	VITESSE DE SEDIMENTATION DE L'AZOTE NON ALGAL
SEDIMENTATION VELOCITY OF ORGANIC LOAD	VITESSE DE SEDIMENTATION DE LA CHARGE ORGANIQUE
SEDIMENTATION VELOCITY OF ORGANIC PHOSPHORUS	VITESSE DE SEDIMENTATION DU PHOSPHORE ORGANIQUE
SOLAR RADIATION READ IN METEO FILE	RAYONNEMENT SOLAIRE LU DANS LE FICHIER METEO
STEERING FILE	FICHIER DES PARAMETRES
SUNSHINE FLUX DENSITY ON WATER SURFACE	DENSITE DE FLUX DU RAYONNEMENT SOLAIRE A LA SURFACE
VALIDATION	VALIDATION
VARIABLES FOR WAQ PRINTOUTS	VARIABLES POUR LES SORTIES QE
VEGETAL RESPIRATION R	RESPIRATION VEGETALE R
VEGETAL TURBIDITY COEFFICIENT WITHOUT PHYTO	COEFFICIENT DE TURBIDITE VEGETALE SANS PHYTO
WAQ CASE TITLE	TITRE DU CAS QE
WAQ VARIABLES TO BE PRINTED	VARIABLES QE A IMPRIMER
WATER DENSITY	MASSE VOLUMIQUE DE L'EAU

WATER QUALITY PRINTOUT PERIOD	PERIODE POUR LES SORTIES QUALITE D'EAU
WATER SALINITY	SALINITE DE L'EAU
WATER SPECIFIC HEAT	CHALEUR SPECIFIQUE DE L'EAU
WATER TEMPERATURE	TEMPERATURE DE L'EAU
WEIR REAERATION COEFFICIENT RS	COEFFICIENT DE REAERATION DU SEUIL RS

3.2 French/English glossary

BILAN DE MASSE	MASS-BALANCE
CHALEUR SPECIFIQUE DE L'AIR	AIR SPECIFIC HEAT
CHALEUR SPECIFIQUE DE L'EAU	WATER SPECIFIC HEAT
CLARTE DU CIEL	LIGHTNESS OF THE SKY
COEFFICIENT 1 DE LA LOI DE DEGRADATION DES TRACEURS	COEFFICIENT 1 FOR LAW OF TRACERS DEGRADATION
COEFFICIENT D EXTINCTION DE LA LUMIERE	LIGHT EXTINCTION COEFFICIENT
COEFFICIENT DE CALAGE DU MODELE D'ECHANGES EAU-ATMOSPHERE	COEFFICIENT TO CALIBRATE THE ATMOSPHERE-WATER EXCHANGE MODEL
COEFFICIENT DE DISTRIBUTION	COEFFICIENT OF DISTRIBUTION
COEFFICIENT DE DISTRIBUTION 2	COEFFICIENT OF DISTRIBUTION 2
COEFFICIENT DE REAERATION DU SEUIL RS	WEIR REAERATION COEFFICIENT RS
COEFFICIENT DE REAERATION K2	K2 REAERATION COEFFICIENT
COEFFICIENT DE TURBIDITE VEGETALE SANS PHYTO	VEGETAL TURBIDITY COEFFICIENT WITHOUT PHYTO
COEFFICIENT REPRESENTATIF DE LA COUVERTURE NUAGEUSE	COEFFICIENT OF CLOUDING RATE
COEFFICIENTS A ET B POUR LA FORMULE DE RS	COEFFICIENTS A AND B FOR RS FORMULA
COEFFICIENTS DE CALAGE DU RAYONNEMENT ATMOSPHERIQUE	COEFFICIENTS FOR CALIBRATING ATMOSPHERIC RADIATION
COEFFICIENTS DE CALAGE DU RAYONNEMENT DU PLAN D'EAU	COEFFICIENTS FOR CALIBRATING SURFACE WATER RADIATION
COEFFICIENTS DE LA FORMULE D'AERATION	COEFFICIENTS OF AERATION FORMULA
COEFFICIENTS DE MORTALITE ALGALE A 20C	COEFFICIENTS OF ALGAL MORTALITY AT 20C
COEFFICIENTS DE TOXICITE POUR LES ALGUES	ALGAL TOXICITY COEFFICIENTS
CONCENTRATION DE SATURATION EN O2 DE L'EAU (CS)	O2 SATURATION DENSITY OF WATER (CS)
CONSTANTE CINETIQUE DE DESORPTION	CONSTANT OF DESORPTION KINETIC
CONSTANTE CINETIQUE DE DESORPTION 2	CONSTANT OF DESORPTION KINETIC 2
CONSTANTE DE CINETIQUE DE NITRIFICATION K4	CONSTANT OF NITRIFICATION KINETIC K4

CONSTANTE DE DEGRADATION DE LA CHARGE ORGANIQUE K1	CONSTANT OF DEGRADATION OF ORGANIC LOAD K1
CONSTANTE DE DEGRADATION DE LA CHARGE ORGANIQUE K120	CONSTANT OF DEGRADATION OF ORGANIC LOAD K120
CONSTANTE DE DEMI-SATURATION EN AZOTE	CONSTANT OF HALF-SATURATION WITH NITROGEN
CONSTANTE DE DEMI-SATURATION EN PHOSPHATE	CONSTANT OF HALF-SATURATION WITH PHOSPHATE
CONSTANTE DE DESINTEGRATION EXPONENTIELLE	EXPONENTIAL DESINTEGRATION CONSTANT
CONSTANTE DE LA CINETIQUE DE NITRIFICATION K520	CONSTANT FOR THE NITRIFICATION KINETIC K520
CONTRAINTE CRITIQUE DE REMISE EN SUSPENSION	CRITICAL STRESS OF RESUSPENSION
CONTRAINTE CRITIQUE DE SEDIMENTATION	SEDIMENTATION CRITICAL STRESS
DEBUGGER	DEBUGGER
DEMANDE BENTHIQUE	BENTHIC DEMAND
DENSITE DE FLUX DU RAYONNEMENT SOLAIRE A LA SURFACE	SUNSHINE FLUX DENSITY ON WATER SURFACE
DICTIONNAIRE	DICTIONARY
DISPERSION LONGITUDINALE	DISPERSION ALONG THE FLOW
DISPERSION TRANSVERSALE	DISPERSION ACROSS THE FLOW
FICHIER DE GEOMETRIE	GEOMETRY FILE
FICHIER DE REFERENCE	REFERENCE FILE
FICHIER DES CONDITIONS AUX LIMITES	BOUNDARY CONDITIONS FILE
FICHIER DES PARAMETRES	STEERING FILE
FICHIER DES PARAMETRES AED2	AED2 STEERING FILE
FICHIER DES PARAMETRES BIVALVES AED2	AED2 BIVALVE STEERING FILE
FICHIER DES PARAMETRES PATHOGENES AED2	AED2 PATHOGEN STEERING FILE
FICHIER DES PARAMETRES PHYTOPLANCTON AED2	AED2 PHYTOPLANKTON STEERING FILE
FICHIER DES PARAMETRES ZOOPLANCTON AED2	AED2 ZOOPLANKTON STEERING FILE
FICHIER DES RESULTATS	RESULTS FILE
FICHIER FORTRAN	FORTRAN FILE
FICHIER HYDRODYNAMIQUE	HYDRODYNAMIC FILE
FORMAT DU FICHIER DE GEOMETRIE	GEOMETRY FILE FORMAT
FORMAT DU FICHIER DE REFERENCE	REFERENCE FILE FORMAT
FORMAT DU FICHIER DES RESULTATS	RESULTS FILE FORMAT
FORMAT DU FICHIER HYDRODYNAMIQUE	HYDRODYNAMIC FILE FORMAT
FORMULE DE CALCUL DE CS	FORMULA FOR COMPUTING CS
FORMULE DE CALCUL DE K2	FORMULA FOR COMPUTING K2
FORMULE DE CALCUL DE RS	FORMULA FOR COMPUTING RS
FORMULE DU RAYONNEMENT ATMOSPHERIQUE	FORMULA OF ATMOSPHERIC RADIATION
LOI DE DEGRADATION DES TRACEURS	LAW OF TRACERS DEGRADATION
MASSE VOLUMIQUE DE L'EAU	WATER DENSITY

METHODE DE CALCUL DU COEFFICIENT D'EXTINCTION DU RAY	METHOD OF COMPUTATION OF RAY EXTINCTION COEFFICIENT
MODELE D'ECHANGES CINETIQUES	KINETIC EXCHANGE MODEL
MODELE D'ECHANGES EAU-ATMOSPHERE	ATMOSPHERE-WATER EXCHANGE MODEL
OXYGENE CONSOMME PAR NITRIFICATION	CONSUMED OXYGEN BY NITRIFICATION
OXYGENE PRODUIT PAR PHOTOSYNTHESE	OXYGEN PRODUCED BY PHOTOSYNTHESIS
PARAMETRE DE CALAGE DE LA FORMULE DE SMITH	PARAMETER OF CALIBRATION OF SMITH FORMULA
PERIODE POUR LES SORTIES QUALITE D'EAU	WATER QUALITY PRINTOUT PERIOD
PHOTOSYNTHESE P	PHOTOSYNTHESIS P
POURCENTAGE D'AZOTE ASSIMILABLE DANS LE PHYTO MORT	PERCENTAGE OF NITROGEN ASSIMILABLE IN DEAD PHYTO
POURCENTAGE DE PHOSPHORE ASSIMILABLE DANS LE PHYTO MORT	PERCENTAGE OF PHOSPHORUS ASSIMILABLE IN DEAD PHYTO
PROCESSEURS PARALLELES	PARALLEL PROCESSORS
PROFONDEUR DE SECCHI	SECCHI DEPTH
PROPORTION D'AZOTE DANS LES CELLULES DU PHYTO	PROPORTION OF NITROGEN WITHIN PHYTO CELLS
PROPORTION DE PHOSPHORE DANS LES CELLULES DU PHYTO	PROPORTION OF PHOSPHORUS WITHIN PHYTO CELLS
RAYONNEMENT SOLAIRE LU DANS LE FICHIER METEO	SOLAR RADIATION READ IN METEO FILE
RESPIRATION VEGETALE R	VEGETAL RESPIRATION R
SALINITE DE L'EAU	WATER SALINITY
TAUX D'EROSION	EROSION RATE
TAUX D'EVAPORATION	EVAPORATION RATE
TAUX DE CROISSANCE ALGALE MAXIMUM A 20C	MAXIMUM ALGAL GROWTH RATE AT 20C
TAUX DE RESPIRATION DE LA BIOMASSE ALGALE	RESPIRATION RATE OF ALGAL BIOMASS
TAUX DE TRANSFORMATION DU NOR EN NO3	RATE OF TRANSFORMATION OF NOR TO NO3
TAUX DE TRANSFORMATION DU POR EN PO4	RATE OF TRANSFORMATION OF POR TO PO4
TEMPERATURE DE L'EAU	WATER TEMPERATURE
TITRE DU CAS QE	WAQ CASE TITLE
VALIDATION	VALIDATION
VARIABLES POUR LES SORTIES QE	VARIABLES FOR WAQ PRINTOUTS
VARIABLES QE A IMPRIMER	WAQ VARIABLES TO BE PRINTED
VISCOSITE CINEMATIQUE EAU	KINEMATIC WATER VISCOSITY
VITESSE DE CHUTE DES MES	SEDIMENT SETTLING VELOCITY
VITESSE DE SEDIMENTATION DE L'AZOTE NON ALGAL	SEDIMENTATION VELOCITY OF NON ALGAL NITROGEN
VITESSE DE SEDIMENTATION DE LA CHARGE ORGANIQUE	SEDIMENTATION VELOCITY OF ORGANIC LOAD
VITESSE DE SEDIMENTATION DU PHOSPHORE ORGANIQUE	SEDIMENTATION VELOCITY OF ORGANIC PHOSPHORUS

[1]

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