

Namelist "Instantaneous_Field_Listing"

This data set defines the instantaneous fields of the physical quantities that the user want to record as results of simulation.

The recording rate is defined with the variable "Field_Recording_Rate" that belongs to the namelist "Simulation_Management".

The files of instantaneous fields are formatted in binary. They are named on the form res_xxxxxxx_yyyyy.d. 'yyyyy' is the subdomain number for simulations based on the MPI domain-decomposition approach, 'xxxxxxx' is the file number.

Don't forget to set the boolean data "End_of_Data_Block" at the end of the namelist. The value is ".false." by default. A ".true." value means the end of the data set when several namelists are used to define several records of instantaneous fields.

Name_of_Field

- Type : String of six characters (maximum)
- This data names the physical quantity to record. This name must match with the lookup table of the code which is composed of 18 pre-selected physical quantities.
 - "U " : Velocity component along the I-direction
 - "V " : Velocity component along the J-direction
 - "W " : Velocity component along the I-direction
 - "T " : Temperature
 - "P " : Pressure
 - "RHO " : Density of the fluid
 - "divU " : Divergence of the velocity field
 - "divRU " : Divergence of the momentum field
 - "PHI " : Pressure increment ($P^{n+1} - P^n$)
 - "drho " : Part of the source term of the Poisson's equation bounded to the mass variation.
For expert users only.
 - "SCR_P " : Source term of the Poisson's equation. For expert users only.
 - "S_RAD " : Radiative source term (when radiative heat transfer is considered in some specific simulations)
 - "MU " : Dynamic viscosity of the fluid
 - "MU_SG " : subgrid dynamic viscosity associated to the LES model selected.
 - "TRACE " : Passive tracer or distance function used in the context of two-phase flow simulation with a level-set approach
 - "Te " : Electronic temperature (simulation of ionized gas)
 - "rho_e " : density of electrons (simulation of ionized gas)
 - "roehe " : Electronic enthalpy (simulation of ionized gas)
- In the case of multi-species flows, instantaneous fields of species mass fraction can be recorded. for that set the name of the species already used in the namelist "Species_Properties" in the variable "Name_of_Field".
- In order to record any new instantaneous field, please contact the developer (yann.fraigneau@limsi.fr_to_removed).

Recording_Enabled

- Type : Boolean value
- The record of the instantaneous field is activated (if .true.)

From:

<https://sunfluidh.lisn.upsaclay.fr/> - Documentation du code de simulation numérique SUNFLUIDH

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