Namelist "Field_Recording_Setup"

This data set allows the user

- to set the precision (simple or double) on the data related to the instantaneous fields, the statistical fields or specific fields defined on slices.
- to reduce the dimension of the statistical fields in order to get a profile along a given direction. The reduction is made by space averaging over the other directions.

Full data set of the namelist

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  &Field_Recording_Setup  Precision_On_Instantaneous_Fields=1 ,
                          Precision_On_Statistical_Fields= 2 ,
                          Precision_On_SpaceAveragedSlice_Fields= 1 ,
                          Precision_On_Slice_Fields= 1 ,
Slice_Gathering_Enabled= .false. ,
                          Time_Statistics_Enabled= .true. ,
                          Sample_Rate_For_Statistics= 1 ,
                          Statistic_Space_Average_Type= "NO_SPACE_AVERAGE" /
```

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Precision_On_Instantaneous_Fields

- Type : Integer Value
  - 1 : Instantaneous fields are recorded in single precision (r4).
  - 2 : Instantaneous fields are recorded in double precision (r8).

Precision_On_Slice_Fields

- Type : Integer Value
  - 1 : Instantaneous fields on slices are recorded in single precision (r4).
  - 2 : Instantaneous fields on slices are recorded in double precision (r8).

Slice_Gathering_Enabled

- Type : boolean (default value : false)
  - true : When MPI domain decomposition is used, all pieces of a slice which are split on different subdomains are gathered and recorded in a same file. This option is not available when the computation is performed in MPI graphical topology.
  - false : When MPI domain decomposition is used, each piece of a slice that belongs to a specific subdomain is recorded in a separate file.

Precision_On_SpaceAveragedSlice_Fields

- Type : Integer Value
  - 1 : Special data (space-averaged fields on slices) are recorded in single precision (r4).
  - 2 : Special data (space-averaged fields on slices) are recorded in double precision (r8).

Precision_On_Statistical_Fields

- Type : Integer Value
  - 1 : Statistical fields are recorded in single precision (r4).
  - 2 : Statistical fields are recorded in double precision (r8).

Time_Statistics_Enabled

- Type : Boolean value
  - .true. : For any quantity f, the statistical computation yields a time average field: $$ \overline{f(x,y,z)}= \frac{1}{T}\sum_{n=1}^{n=N_t} f(x_i,x_j,x_k,t_n) \Delta t$$
  - .false. : For any quantity f, the statistical computation yields a sample averafge field : $$ \overline{f(x,y,z)}= \frac{1}{N_t}\sum_{n=1}^{n=N_t} f(x_i,x_j,x_k,t_n) $$ where N_t is number of instantaneous fields considered for the computation.

Statistic_Space_Averaged_Type

- Type : characters
- This data defines the direction(s) along which a spatial average is computed in addition of time or sample average:
  - NO_SPACE_AVERAGE : No space average is computed.
  - SPACE_AVERAGE_IJ : A space average is computed along the I & J-directions : $$ <\overline{f(x_k)}>= \frac{1}{N_i.N_j.T}\sum_{n=1}^{n=N_t}\sum_{i=1}^{i=N_i} \sum_{j=1}^{j=N_j} f(x_i,x_j,x_k,t_n) \Delta t$$ or $$ <\overline{f(x_k)}>= \frac{1}{N_i.N_j.N_t}\sum_{n=1}^{n=N_t}\sum_{i=1}^{i=N_i} \sum_{j=1}^{j=N_j} f(x_i,x_j,x_k,t_n) $$
  - SPACE_AVERAGE_IK : A space average is computed along the I & K-directions
  - SPACE_AVERAGE_JK : A space average is computed along the J & K-directions
  - SPACE_AVERAGE_I : A space average is computed along the I-direction : $$ <\overline{f(x_j,x_k)}>= \frac{1}{N_i.T}\sum_{n=1}^{n=N_t}\sum_{i=1}^{i=N_i} f(x_i,x_j,x_k,t_n) \Delta t$$ or $$ <\overline{f(x_j,x_k)}>= \frac{1}{N_i.N_t}\sum_{n=1}^{n=N_t}\sum_{i=1}^{i=N_i} f(x_i,x_j,x_k,t_n) $$
  - SPACE_AVERAGE_J : A space average is computed along the J-direction
  - SPACE_AVERAGE_K : A space average is computed along the K-direction