

Domain_Features

This data setup defines the domain size, the grid data, the domain decomposition features (MPI parallelisation characteristics : number of MPI processes bounded to subdomains and how they are distributed over the domain) and the number of threads also used to split the domain (OpenMP parallelisation).

Geometric_Layout

- Type : integer value
- This option selects the type of geometry configuration used :
 - 0 : Cartesian geometry
 - 1: Cylindrical geometry. The axis is oriented along the K-direction. The coordinate system is $r(i), \theta(j), z(k)$
 - 2: Cylindrical geometry. The axis is oriented along the I-direction. The coordinate system is $r(j), \theta(k), z(i)$
 - 3: Cylindrical geometry. The axis is oriented along the J-direction. The coordinate system is $r(k), \theta(i), z(j)$

Start_Coordinate_I_Direction

- Type : real value
- Origin coordinate along the I-direction.

Start_Coordinate_J_Direction

- Type : real value
- Origin coordinate along the J-direction.

Start_Coordinate_K_Direction

- Type : real value
- Origin coordinate along the K-direction.

End_Coordinate_I_Direction

- Type : real value
- End coordinate along the I-direction.

End_Coordinate_J_Direction

- Type : real value
- End coordinate along the J-direction.

End_Coordinate_K_Direction

- Type : real value
- End coordinate along the K-direction.

Cells_Number_I_Direction

- Type : integer value
- Number of cells along the I-direction, excluding the ghost-cells)

Cells_Number_J_Direction

- Type : integer value
- Number of cells along the J-direction, excluding the ghost-cells)

Cells_Number_K_Direction

- Type : integer value
- Number of cells along the K-direction, excluding the ghost-cells)

Number_OMP_Threads

- integer value
- Number of Threads for OpenMP parallelization

MPI_Cartesian_Topology

- Type : Boolean value
- Select the MPI cartesian topology for the domain decomposition method (same number of subdomains along a given direction)
- ===== MPI_Topology_Topology =====
- Type : Boolean value
- Select the MPI graphic topology for the domain decomposition method (the number of subdomain along a given direction is variable)

Total_Number_MPI_Processes

- Type : integer value
- Total number of MPI processes used in the domain decomposition method

Max_Number_MPI_Proc_I_Direction

- Type : integer value

- Number of MPI processes along the I-direction (maximum number for the graphic topology)

Max_Number_MPI_Proc_J_Direction

- Type : integer value
- Number of MPI processes along the J-direction (maximum number for the graphic topology)

Max_Number_MPI_Proc_K_Direction

- Type : integer value
- Number of MPI processes along the K-direction (maximum number for the graphic topology)

Regular_Mesh

- Type : boolean value
- if .true., the mesh size is regular along each direction and the grid is directly built by the code.
- If .false., the grid is irregular and the cell distribution is read in the specific files `maillx_XXXXX.d`, `mailly_XXXXX.d` and `maillz_XXXXX.d` (XXXXX corresponds to the subdomain/MPI-process number if the MPI domain-decomposition is used). These files are created from the mesh builder named `meshgen.x`.

From:

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

Permanent link:

https://sunfluidh.lisn.upsaclay.fr/doku.php?id=sunfluidh:domain_features_namelist&rev=1476012587

Last update: 2016/10/09 13:29

