Namelist "Velocity_Initialization"

This data setup is used to define the initial velocity field over the domain.

Full data set of the namelist

The values are arbitrary chosen.

```
  &Velocity_Initialization  I_Velocity_Reference_Value          = 1.0  ,
J_Velocity_Reference_Value          = 0.0  , K_Velocity_Reference_Value
= 0.0 ,
                            Initial_Field_Option_For_Velocity_I = 0    ,
Initial_Field_Option_For_Velocity_J = 0    ,
Initial_Field_Option_For_Velocity_K = 0,
                            White_Noise_Magnitude_For_Velocity_I= 0.0  ,
White_Noise_Magnitude_For_Velocity_J= 0.0  ,
White_Noise_Magnitude_For_Velocity_K= 0.0 /
```



Find some examples here.

Definition of the data set

I_Velocity_Reference_Value

- Type : real value
- Reference velocity along the I-direction
- Default value = 0.0

J_Velocity_Reference_Value

- Type : real value
- Reference velocity along the J-direction
- Default value = 0.0

K_Velocity_Reference_Value

- Type : real value
- Reference velocity along the K-direction
- Default value = 0.0

Initial_Field_Option_For_Velocity_I

- Type : integer value
- Option to define the distribution of the I-velocity component over the domain :
  - 0 : Uniform distribution
  - 1 : Parabolic profile along the J-direction. In this case the reference velocity defines the space-averaged velocity.
  - 2 : Parabolic profile along the K-direction. In this case the reference velocity defines the space-averaged velocity.
  - 3 : Inlet profile is spread over the domain (suppose an inflow oriented along the I-direction is defined)
  - 4 or greater : Optional values associated to velocity fields defined by the users in the appropriate fortran module (see module_user_define_init_fields.f90). BEWARE : This can involve generally all the velocity components. In this case, the option value associated to the other velocity components can be useless. The reference values can be used to define the velocity scales.
- Default value = 0

Initial_Field_Option_For_Velocity_J

- Type : integer value
- Option to define the distribution of the J-velocity component over the domain :
  - 0 : Uniform distribution
  - 1 : Parabolic profile along the I-direction. In this case the reference velocity defines the space-averaged velocity.
  - 2 : Parabolic profile along the K-direction. In this case the reference velocity defines the space-averaged velocity.
  - 3 : Inlet profile is spread over the domain (suppose an inflow oriented along the J-direction is defined)
- Default value = 0

Initial_Field_Option_For_Velocity_K

- Type : integer value
- Option to define the distribution of the J-velocity component over the domain :
  - 0 : Uniform distribution
  - 1 : Parabolic profile along the I-direction
  - 2 : Parabolic profile along the J-direction
  - 3 : Inlet profile is spread over the domain (suppose an inflow oriented along the K-direction is defined)
- Default value = 0

White_Noise_Magnitude_For_Velocity_I

- Type : real value
- Magnitude of the white noise on the I-velocity component.
- The magnitude is defined as a fraction of the local value of the I-velocity component in each cell

(i.e. 0.4 corresponds to 40% of the local value of velocity component on the grid)
- Default value = 0.0

White_Noise_Magnitude_For_Velocity_J

- Type : real value
- Magnitude of the white noise on the J-velocity component.
- Default value = 0.0

White_Noise_Magnitude_For_Velocity_K

- Type : real value
- Magnitude of the white noise on the K-velocity component.
- Default value = 0.0

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https://sunfluidh.lisn.upsaclay.fr/doku.php?id=sunfluidh:velocity_initialization_namelist

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