

Initialization of the velocity, temperature and density over the domain

The fluid density is implicitly initialized with a uniform field because the fluid is incompressible and homogeneous. No data set is therefore required.



For initializing an incompressible bi-fluid flow, see the [Namelist "Two_Fluids_Initialization"](#). For initializing a multi-components flow, see the [Namelist "Species_Initialization"](#).

The initial fluid temperature is uniform over the domain.

```
&Temperature_Initialization Temperature_Reference_Value = 1.0 ,
!--- Default value
                               Initial_Field_Option_For_Temperature = 0 / 
!--- Initialization of the field with the default value
```



At present, only the uniform initialization of the temperature field is available unless the user creates its own initialization procedure in the fortran source file "module_user_define_init_fields.f90".

The initial velocity field is defined by spreading out the inflow velocity profile. This choice allows us to ensure a perfect flowrate conservation between inflow and outflow for the first time step.

```
&Velocity_Initialization I_Velocity_Reference_Value = 0.0 , !---
default value for the I-velocity component
                               J_Velocity_Reference_Value = 0.0 , !---
default value for the J-velocity component
                               K_Velocity_Reference_Value = 0.0 , !---
default value for the K-velocity component
                               Initial_Field_Option_For_Velocity_I = 3 , !--- the
inflow velocity profile is spread out in the I-direction
                               Initial_Field_Option_For_Velocity_J = 0 , !---
Initialization of the field with the default value
                               Initial_Field_Option_For_Velocity_K = 0. /!---
Initialization of the field with the default value
```



The variables related to the white noise have been removed.

The velocity field initialization depends on the velocity profile defined in the namelist [Inlet_Boundary_Condition](#).

For more examples about the velocity field initialization [click here](#).

From:

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



Permanent link:

https://sunfluidh.lisn.upsaclay.fr/doku.php?id=sunfluidh:tuto1_fieldinit

Last update: **2017/09/29 16:38**