Examples of data set

The user finds here some examples illustrating different configurations related to the namelist "Velocity_Initialization".
The data initialized by default, and not explicitly required, are generally not present for a sake of clarity.

Uniform Velocity field

The velocity is oriented along the J-direction only.
Its value is 1.5.
Other velocity components are null.

```
  &Velocity_Initialization  I_Velocity_Reference_Value          = 0.0  ,
J_Velocity_Reference_Value          = 1.5  , 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 /
```

By considering the default values of the namelist, it could simply be write as :

```
  &Velocity_Initialization   J_Velocity_Reference_Value          = 1.5  /
```

Parabolic velocity profile

The velocity is oriented along the J-direction and its mean value over the cross section of the domain is 1.5.
The profile depends on The I-direction.
Other velocity components are null.

```
  &Velocity_Initialization   J_Velocity_Reference_Value          = 1.5 ,
Initial_Field_Option_For_Velocity_J = 1 /
```

"Spreading" velocity field from an inlet

Relevant when just one inlet is present.

The normal inflow is oriented along the I-direction.
Other velocity components are null.

```
  &Velocity_Initialization  Initial_Field_Option_For_Velocity_I = 3 /
```

The inflow velocity profile is spread out over the domain in the I-direction. The mean value of the velocity component is not required (but this value can still be set just to keep it mind).

Parabolic Velocity field with superimposed white noise

The velocity is oriented along the J-direction only. Its mean value is 1.5.
The parabolic profile depends on The I-direction.

```
  &Velocity_Initialization  I_Velocity_Reference_Value          = 0.0  ,
J_Velocity_Reference_Value          = 1.5  , K_Velocity_Reference_Value
= 0.0 ,
                            Initial_Field_Option_For_Velocity_I = 0    ,
Initial_Field_Option_For_Velocity_J = 1    ,
Initial_Field_Option_For_Velocity_K = 0,
                            White_Noise_Magnitude_For_Velocity_I= 0.05  ,
White_Noise_Magnitude_For_Velocity_J= 0.1  ,
White_Noise_Magnitude_For_Velocity_K= 0.02 /
```

A white noise is superimposed on each velocity component such as :

- The random fluctuations on the I-velocity component are 5% of the mean value of the J-velocity component (because the mean value of the I-velocity component is null)
- The random fluctuations on the J-velocity component are 10% of the local value given by the parabolic profile.
- The random fluctuations on the K-velocity component are 2% of the mean value of the J-velocity (because the mean value of the K-velocity component is null)

Keep in mind the magnitude of fluctuations is defined in respect with the local value of the velocity component invoked only if it is a non-zero value . Otherwise this magnitude is relied on the maximum value given by I_Velocity_Reference_Value, J_Velocity_Reference_Value or K_Velocity_Reference_Value