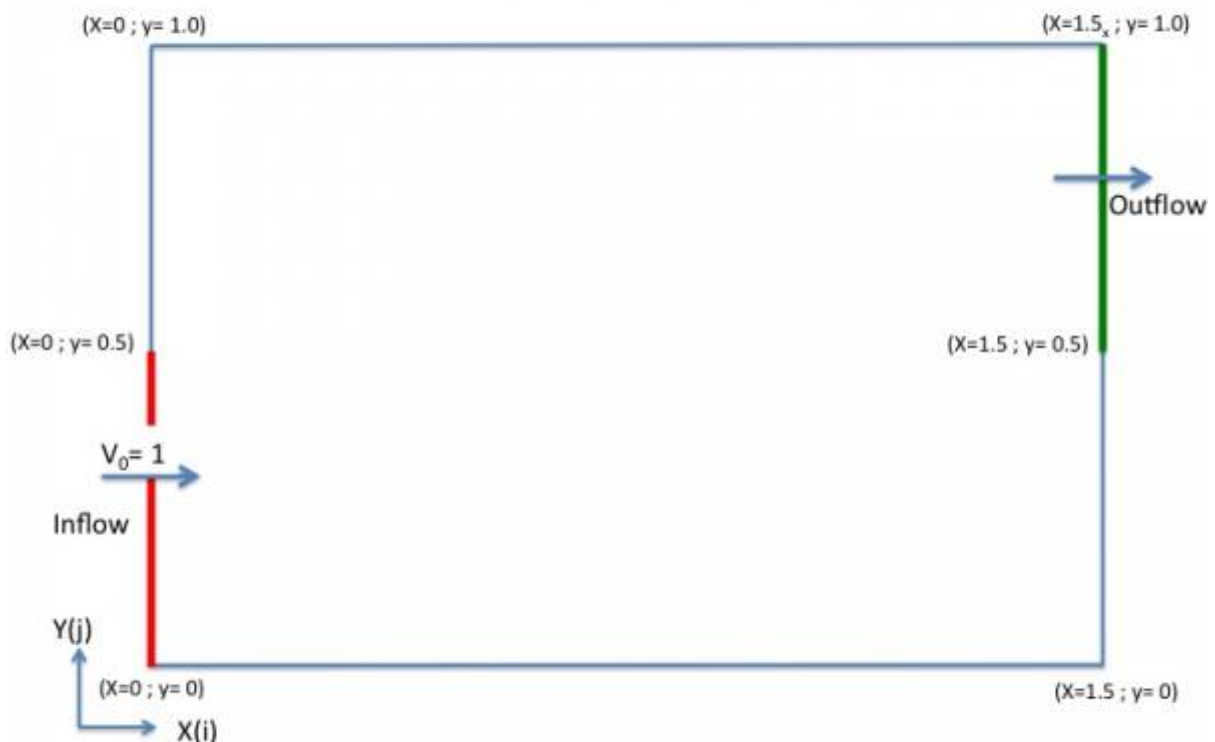


Example of inflow/outflow boundary conditions



- This example is defined for a 2D geometrical configuration. The size of the domain is 1.5×1.0 .
- The flow is homogeneous (no multi-species gas)
- An inlet is located at the down left side of the domain.
- An outlet is located at the top right side of the domain.
- Conditions are constant in time



Inflow data

Example 1



- The flow is homogeneous (no multi-species gas)
- Conditions are constant in time

```
&Inlet_Boundary_Conditions
Type_of_BC= "INLET", Direction_Normal_Plan= 1 ,
Plan_Location_Coordinate= 0.0 ,
Start_Coordinate_of_First_Span = 0.0, End_Coordinate_of_First_Span = 0.5,
```

```
Start_Coordinate_of_Second_Span= 0.0 , End_Coordinate_of_Second_Span= 0.0
,
Flow_Direction= 1 ,
Normal_Velocity_Reference_Value= 1.0 ,
Temperature_Reference_Value= 293.0 ,
Density_Reference_Value= 1.2,
Define_Velocity_profile= 0 ,
End_of_Data_Block= .true. /
```

Example 2

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- The flow is homogeneous (no multi-species gas)
- The temperature and the density are constant.
- The normal velocity component is time-dependent :
 - The function is sinusoidal. The mean value of the time function is given by "Normal_Velocity_Reference_Value".
 - the frequency is 10 Hz
 - The magnitude is 40% of the mean inlet velocity

```
&Inlet_Boundary_Conditions
Type_of_BC= "INLET", Direction_Normal_Plan= 1 ,
Plan_Location_Coordinate= 0.0 ,
Start_Coordinate_of_First_Span = 0.0, End_Coordinate_of_First_Span = 0.5,
Start_Coordinate_of_Second_Span= 0.0 , End_Coordinate_of_Second_Span= 0.0
,
Flow_Direction= 1 ,
Normal_Velocity_Reference_Value= 1.0 ,
Temperature_Reference_Value= 293.0 ,
Density_Reference_Value= 1.2,
Define_Velocity_profile= 0 ,
Time_Fct_Name= "Sinus" , Time_Fct_Threshold= 0.0 ,
Time_Fct_Time_Scale= 0.1 , Time_Fct_Magnitude= 0.4 ,
End_of_Data_Block= .true. /
```

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

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