Teaching Non-Ideal Reactors with CFD Tools

Geometry

A sketch of the geometry is presented in Figure 1. A fully developed laminar profile is imposed at the inlet boundary:

$$u_x(y) = U_{max} \left[1 - \left(\frac{y - H/20}{H/20} \right)^2 \right]$$

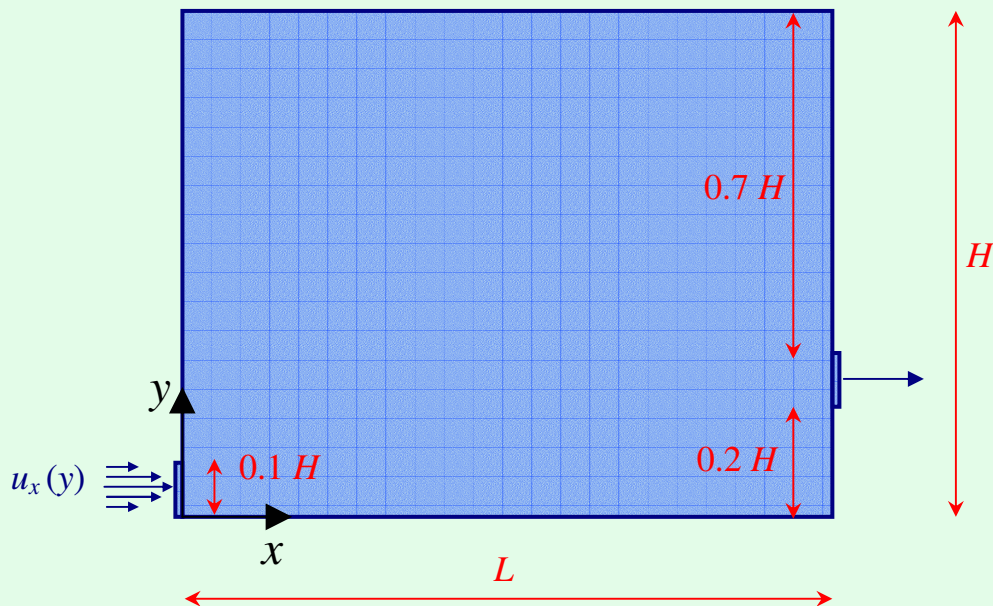where $U_{max} = 1.5\, U_{mean}$ is the fluid velocity at the center of the inlet boundary.

Figure 1

The Reynolds number is defined based on inlet conditions,

$$Re = \frac{\rho U_{mean} H/10}{\mu}$$

where ρ and μ are the density and viscosity of the fluid, respectively.

Introduction   Geometry   Picture Gallery   Movie Gallery