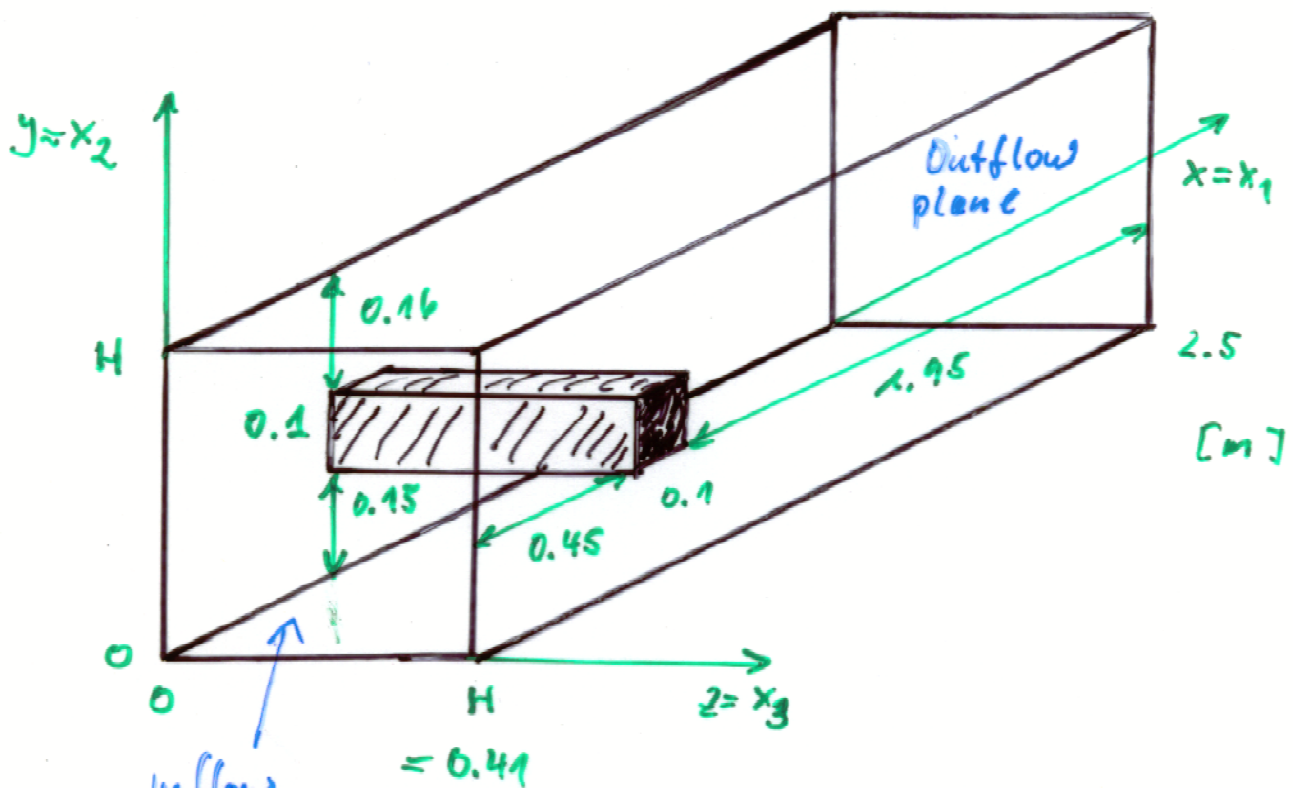


4.2. Der 3D Fall: ■

inflow
plane

stationär:

$$v_1(0, y, z) = 16 v_m y z (H-y)(H-z) / H^4$$

$$v_2(0, y, z) = v_3(0, y, z) = 0$$

$$v_m = 0.45 \text{ [m/s]} \Rightarrow Re = 20$$

instationär:

$$v_1(0, y, z, t) = 16 v_m y z (H-y)(H-z) \sin\left(\frac{\pi t}{8}\right) / H^4$$

$$v_2(0, y, z) = v_3(0, y, z) = 0$$

$$v_m = 2.25 \text{ [m/s]} \Rightarrow Re(t) \in [0, 100]$$

$$0 \leq t \leq 8 \text{ [s]}$$

Ges: $F_D = \int_S (g v \frac{\partial v}{\partial n} n_2 - p n_1) ds$

$$F_L = - \int_S (g v \frac{\partial v}{\partial n} n_1 + p n_2) ds$$