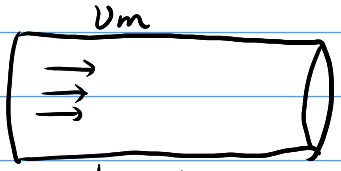
CHE318 L13

Feb-02 2026

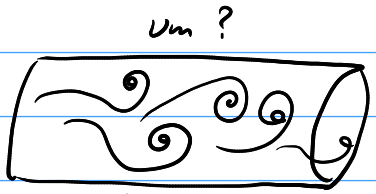
Complexities in Mass Transfer in Real Scenarios

① Convective transport w/ turbulence



plug flow

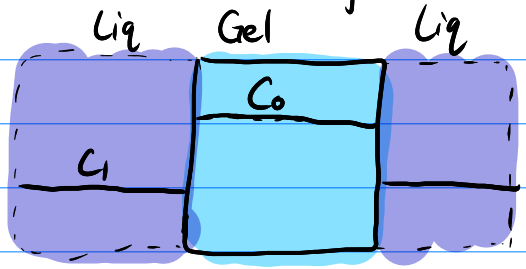
$N_A \doteq C_A \cdot v_m$



turbulent flow

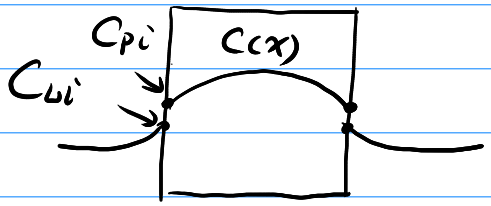
v_m ? How to model N_A ?

② Mass transfer across boundaries



$t=0$

$\Rightarrow$



$t \neq 0$

① Governing eq: easy Fick's 2nd law

$$D_{AB} \frac{d^2 C_A}{dx^2} = \frac{d C_A}{dt}$$

② Boundary conditions ?

C_{Li} C_{pi} $\Rightarrow$ How to determine ?

These will be our motivation to study in Mass transfer part II