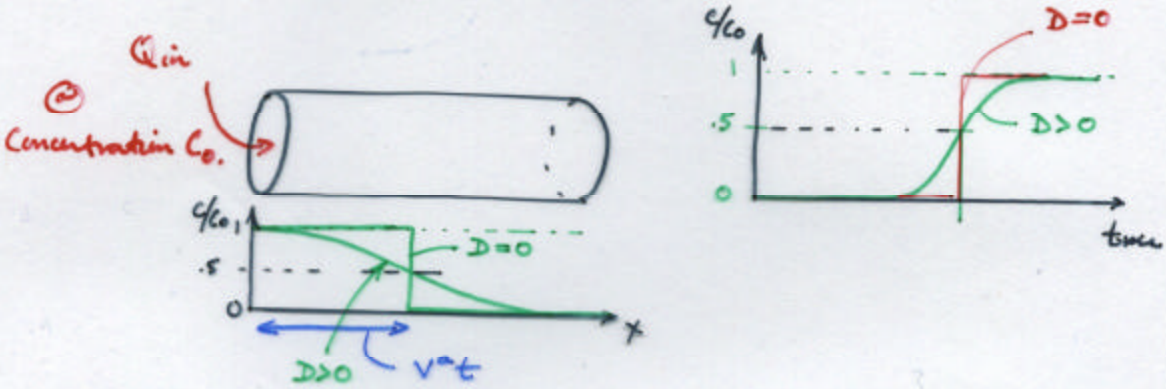
5.7.1 Laboratory Tests:

- Not very useful since scale dependent!
- General method
  - Inject solute of known concentration and measure outlet concentration w/ time.
  - Fit to curve.



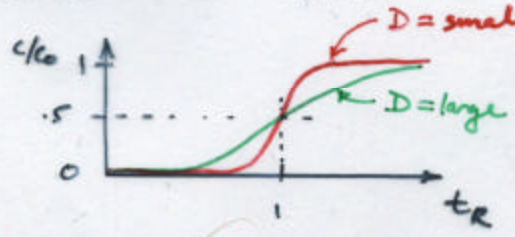
Define flow rate relative to number of pore volumes -

- When x1 pore volume flushed through, the flow of the contaminant should also break through at $c = \frac{1}{2} C_0$

Define No of pore volumes of sample, as U

$$U = \frac{\text{total discharge}}{\text{pore volume}} = \frac{v_x^a A n t}{A L n} = \frac{v_x^a t}{L} = t_R$$

(advective vel)



$$\frac{C}{C_0} \approx \frac{1}{2} \operatorname{erfc}\left[\frac{1-U}{2(UD_L/v_x L)^{1/2}}\right]$$

$\operatorname{erfc}(0) = 1$