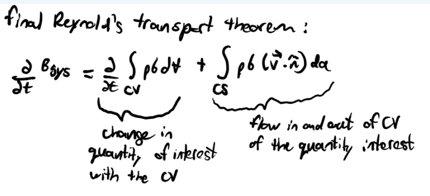
Linear momentum - mass system

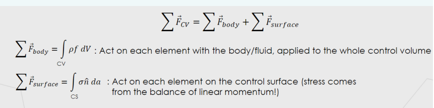
Reynold's Theorem: the bridge. Mass system to control volume. Lagrang to Eulerian	if t=t: Bsys=Bcv, CV=Sys, occupy the same space
extensive quatities (B): depend on the size of the region. If B = m then b = 1 If B = ☐ ☐v then b = v	if t=t +∆t, Bsys≠ Bcv, Cv≠Sys, we use Reynolds here.
intensive quantities (b): independent of the size	Flow rate: Q=Av, if p is constant→mass flow rate

Reynolds formula



when a moving CV we have w as the relative velocity. w= vb-vcs1

Forces acting on fluids



dP/dt=ΣFsys=ΣFcv, where P=mv:momentum

How to set up a cv problem

whats happening, whats gonna cause. What are we trying to solve.	To draw CV: we think of where you biserts-cut into 2 parts
In volume: be within the boundaries of CV. Area integral: must bisect the boundaries/surface of CV	Accummulation? In which integral are we looking. Does the quality act on the surface. Align the flow with dirt vector,

mass vs linear momentum

Balance of Mass: Finding flow rates, the relationship velocities and areas. Scalar. (-/+) from scalar product	Balance of Linear Momentum: Finding relatshs btnw flow properties and forces. Vector. (-/+) from scalar product or direct of vector quantities

B of mass in B of linear momentum problems to find unknown.