

## Fick's Law

We digress briefly to complete the kinematics of two interdiffusing gases. Equation (Nbb10) represented the conservation of mass for the two gases in these circumstances. The kinematics are then completed by a statement of Fick's Law which governs the interdiffusion. For the gas,  $A$ , this law is

$$u_{Ai} = u_i - \frac{\rho D}{\rho_A} \frac{\partial}{\partial x_i} \left( \frac{\rho_A}{\rho} \right) \quad (\text{Nbd1})$$

where  $D$  is the diffusivity.