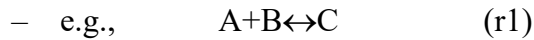


K_p for Systems

- So far only considered one “reaction” relationship
 - e.g., $A+B \leftrightarrow C$
- What if we had a system of such relations (more than one “reaction”)



- We could also write this as a single expression
 - i.e., $2A+B \leftrightarrow D+E$ (r3)=(r1)+(r2)
- Are K_p ’s for these reactions related?

$$K_{p_1} = \frac{P_C}{P_A P_B} \quad K_{p_2} = \frac{P_D P_E}{P_A P_C} \quad K_{p_1} K_{p_2} = \frac{\cancel{P_C} P_D P_E}{P_A^2 P_B \cancel{P_C}} = K_{p_3}$$

overall K_p = product of individual step K_p $K_p = \prod_j K_{p_j}$