

# Normal Modes

Normal mode coordinates have  
a very simple time dependence

$$x_I(t) = A_I e^{i\omega_I t} \quad x_{II}(t) = A_{II} e^{i\omega_{II} t}$$

If we express the coordinate  $x_1$  and  $x_2$  in terms of the  
normal coordinates, we can easily get their time dependence

$$x_1 = \alpha x_I + \beta x_{II}$$

$$x_1(t) = \alpha x_I(t) + \beta x_{II}(t)$$

$$x_1(t) = \alpha e^{i\omega_I t} + \beta e^{i\omega_{II} t}$$