

I: $\rho_1 c_1$

$$p_i = p_{ia} e^{j(\omega t - k_1 x)}$$

$$v_i = v_{ia} e^{j(\omega t - k_1 x)}$$



$$p_r = p_{ra} e^{j(\omega t + k_1 x)}$$

$$v_r = v_{ra} e^{j(\omega t + k_1 x)}$$

$$(p_{ra} = p_{ia} r_p)$$

II: $\rho_2 c_2$

$$p_{2t} = p_{2ta} e^{j(\omega t - k_2 x)}$$

$$v_{2t} = v_{2ta} e^{j(\omega t - k_2 x)}$$



$$p_{2r} = p_{2ra} e^{j(\omega t + k_2 x)}$$

$$v_{2r} = v_{2ra} e^{j(\omega t + k_2 x)}$$

III: $\rho_1 c_1$

$$p_{ta} = p_{ta} e^{j[\omega t - k_1 (x - D)]}$$

$$v_{ta} = v_{ta} e^{j[\omega t - k_1 (x - D)]}$$



$$(p_{ta} = p_{ia} t_p)$$

0

D

x