AREA 1

$$\int_{-\eta\cos\vartheta_I}^{\eta\cos\vartheta_I} e^{-\left(\frac{\tilde{G}\left(\tilde{K_x}\cos\vartheta_I - \tilde{K_{z1}}\sin\vartheta_I\right)^2}{2}\right)} \cdot e^{i\tilde{K_x}\cdot\tilde{x}}\, e^{i\tilde{K_{z1}}\cdot\tilde{z}}\, \frac{d\tilde{K_x}}{\cos\vartheta_I}$$

$$+ \int_{-\eta\cos\vartheta_I}^{\eta\cos\vartheta_I} r\left(\tilde{K_x}\right) e^{-\left(\frac{\tilde{G}\left(\tilde{K_x}\cos\vartheta_I - \tilde{K_{z1}}\sin\vartheta_I\right)^2}{2}\right)} e^{i\tilde{K_x}\tilde{x}}\, e^{-i\tilde{K_{z1}}\tilde{z}}\, \frac{d\tilde{K_x}}{\cos\vartheta_I}$$

reflection amplitude is function of $\tilde{K_x}$

$$\eta = \frac{\omega L_s}{c} \qquad \tilde{K_x} = K_x \cdot L_s \qquad \tilde{x} = \frac{x}{L_s}$$

$$\tilde{G} = \frac{G}{L_s^2} \qquad \tilde{z} = \frac{z}{L_s}$$

$$\tilde{K_{z1}} = K_{z1} \cdot L_s$$

ALL DIMENSIONLESS

AREA 2

$$\int_{-\eta\cos\vartheta_I}^{\eta\cos\vartheta_I} t\left(\tilde{K_x}\right) e^{-\left(\frac{\tilde{G}\left(\tilde{K_x}\cos\vartheta_I - \tilde{K_{z1}}\sin\vartheta_I\right)^2}{2}\right)} e^{i\tilde{K_x}\cdot\tilde{x}}\, e^{+i\tilde{K_{z2}}\cdot\tilde{z}}\, \frac{d\tilde{K_x}}{\cos\vartheta_I}$$

transmission amplitude function of $\tilde{K_x}$