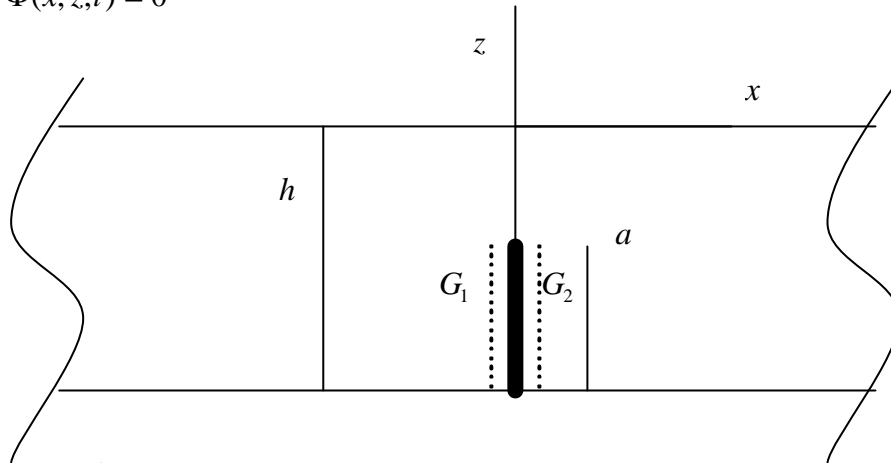


程式 51 Breakwater

G.E. $\nabla^2 \Phi(x, z; t) = 0$



1. 自由水面邊界條件

$$\frac{\partial f_i(x, z)}{\partial z} = \frac{S^2}{g} f_i(x, z), \quad i = 1, 2, \quad z = 0$$

2. 海底底床邊界條件

$$\frac{\partial f_i(x, z)}{\partial z} = 0, \quad i = 1, 2, \quad z = -h$$

3. 相當遠處

$$f_1(x, z) = (e^{ikx} + A_0 e^{-ikx}) \cosh(z+h), \quad x \rightarrow -\infty$$

$$f_2(x, z) = B_0 e^{ikx} \cosh(z+h), \quad x \rightarrow \infty$$

4. 消波表面

$$\frac{\partial f_1(0^-, z)}{\partial z} = ikG_1 f_1(x, z), \quad -h \leq z < -a$$

$$\frac{\partial f_2(0^+, z)}{\partial z} = ikG_2 f_2(x, z), \quad -h \leq z < -a$$

$$* G = G_r + iG_i \text{ 且 } G_r = \frac{gf}{kb(f^2 + S^2)}, \quad G_i = \frac{gS}{kb(f^2 + S^2)}, \quad S = 1 + \frac{C_m(1-g)}{g}$$

1. 求反射率及透射率。
2. 求不同消波係數(G_1, G_2)對反射率及透射率的影響。

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