3.4.2 Obliquely Incident Waves

Bars placed in the environment will have waves incident at all angles. The contour plots to follow are reflection coefficient solutions for various wave numbers \( k \) propagating at angles \( \theta \) from normal incidence. The bottom form assumed for these plots is a shore parallel \( (\delta = \delta(x)) \) sinusoidal bar field. The solution for the extension of non-resonant theory for obliquely incident waves is presented in Chapter 2 and the mild slope solution is presented in previous sections of this chapter. The extension of Mei’s resonant interaction theory is achieved by allowing

\[
\omega^2 = \frac{g \lambda}{2 \cos \theta} \left( \tanh \frac{\lambda h}{2 \cos \theta} \right)
\]  
(3.45)