1.138J/2.062J, WAVE PROPAGATION

Fall, 2000 MIT

Notes by C. C. Mei

Homework No. 5. WAVES IN WATER

5 Wave envelope evolution

Use the derived Schrodinger equation to studty the evolution of capillary- gravity waves on the surface of infintely deeop water. Let the intital envelope be Gaussian

$$A(x,0) = A_o \exp\left(-x^2/L^2\right) \tag{H.5.1}$$

Use Fourier Transform to find $A(x,t)$ first for a general dispersion relation, then describe the solution for the special relation

$$\omega^2 = gk + \frac{Tk^3}{\rho} \tag{H.5.2}$$