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Mathematical methods of mechanics

Home assignment 2 to be handed in Friday November 14, 2008

Deep water waves. Asymptotic shape of water surface for large t
At $t = 0$ the surface of the water is still. It is given a vertical velocity

$$A \exp\left(-\left(\frac{x}{L}\right)^2\right)$$

where A, L are constants. Find the shape of the surface for large time t . L is much smaller than the depth of the water, so it is sufficient to consider the deep water approximation. Use the method of stationary phase and plot the result.