

CORRECTION ON E-Notes CE358 - Fall 2001

Next

Up

Previous

Next: Pressures in deep water Up: Waves in "Infinite" Depth Previous: Velocity flow field in

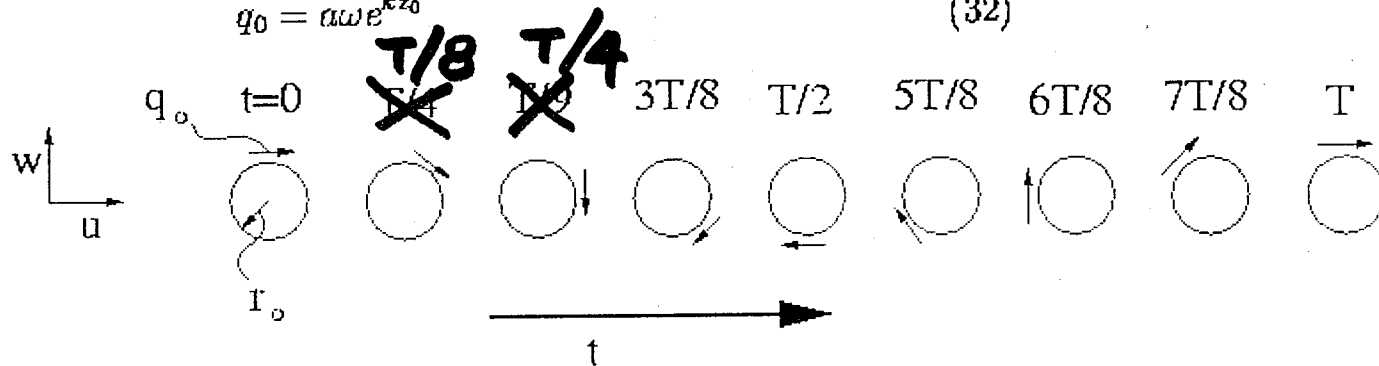
Particle trajectories in deep water

For a particle at a fixed location (e.g. $x = 0, z = z_0$)

$$u(t) = a\omega e^{kz_0} \cos(\omega t) \quad (30)$$

$$w(t) = -a\omega e^{kz_0} \sin(\omega t) \quad (31)$$

$$q_0 = a\omega e^{kz_0} \quad (32)$$



$r_0 =$ radius of particle circular trajectory

$$\omega r_0 = q_0 \rightarrow \omega r_0 = a\omega e^{kz_0} \rightarrow r_0 = a e^{kz_0} \quad \text{Deep Water} \quad (33)$$

Trajectory of Fluid Particles under Sinusoidal Wave in Deep Water: (a more rigorous proof)