CORRECTION ON E_Notes
CE358 - Fall 2001

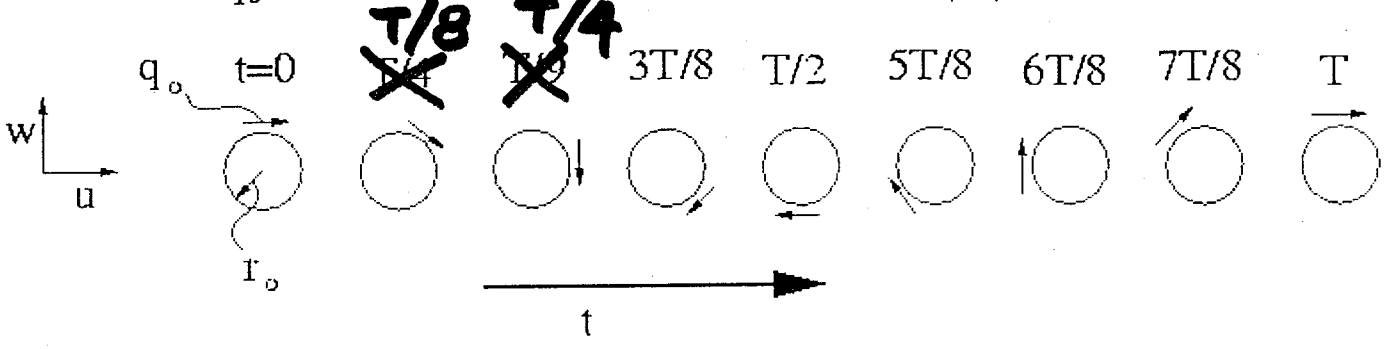
Particle trajectories in deep water

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

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

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

$$q_0 = a\omega e^{kz_0} \tag{32}$$



$r_0 = radius\ of\ particle\ circular\ trajectory$

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

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