

- ▶ when a boat travels through water it produces a wave behind it - a 'wake'
- ▶ the phase velocity of the wave is just the speed of the boat
- ▶ so we can use a laser pulse travelling at close to c in a plasma to drive a strong wave behind it.
- ▶ The wave in this case is an electron plasma oscillation

$$\omega_p = \left(\frac{n_0 e^2}{m_e \epsilon_0} \right)^{\frac{1}{2}}$$

- ▶ Because these are high frequency oscillations the ions do not move and we can have very strong electric fields