

## Independent parameters

Tidal amplitude at the mouth

$$\zeta_0 = \eta_0 / \bar{h}_0$$

Friction number at the mouth

$$\chi_0 = r_S c_0 \zeta_0 g / \left( K^2 \omega \bar{h}_0^{4/3} \right)$$

Estuary shape

$$\gamma = c_0 / (\omega a)$$

Estuary length

$$L_e^* = L_e / L_0$$

## Dependent parameters

Tidal amplitude

$$\zeta = \eta / \bar{h}$$

Friction number

$$\chi = r_S c_0 \zeta g / \left( K^2 \omega \bar{h}^{4/3} \right)$$

Velocity number

$$\mu = v / (r_S \zeta c_0) = v \bar{h} / (r_S \eta c_0)$$

Damping number for water level

$$\delta_A = c_0 d\eta / (\eta \omega dx)$$

Damping number for velocity

$$\delta_V = c_0 dv / (v \omega dx)$$

Celerity number for water level

$$\lambda_A = c_0 / c_A$$

Celerity number for velocity

$$\lambda_V = c_0 / c_V$$

Phase difference

$$\phi = \phi_V - \phi_A$$