For to fluider med tetthet ρ_1 og ρ_2 :

$$v_f \approx \sqrt{\frac{g\lambda\,|\rho_2-\rho_1|}{2\pi(\rho_2+\rho_1)} + \frac{2\pi\gamma}{\lambda(\rho_2+\rho_1)}}$$

der γ = grenseflatespenningen mellom fluidene (N/m)

1 = luft, 2 = vann :

$$\left.\begin{aligned} \gamma &\approx 72.7 \text{ mN/m} \\ \rho_1 &\approx 1.3 \text{ kg/m}^3 \\ \rho_2 &\approx 1000 \text{ kg/m}^3 \end{aligned}\right\} \Rightarrow \begin{aligned} |\rho_2-\rho_1| &\approx \rho_2 \\ (\rho_2+\rho_1) &\approx \rho_2 \end{aligned}$$

$$\Rightarrow \quad v_f \approx \sqrt{\frac{g\lambda}{2\pi} + \frac{2\pi\gamma}{\lambda\rho_2}}$$

Kapillarbølger ($\lambda \ll 1.7$ cm) : $v_f \approx \sqrt{\frac{2\pi\gamma}{\lambda\rho_2}}$

Tyngdebølger ($\lambda \gg 1.7$ cm) : $v_f \approx \sqrt{\frac{g\lambda}{2\pi}}$

$$v_f = \frac{\omega}{k} \Rightarrow \omega(k) = v_f k = \sqrt{gk^{-1} + \gamma k/\rho_2}\cdot k$$

$$= \sqrt{gk + \gamma k^3/\rho_2}$$