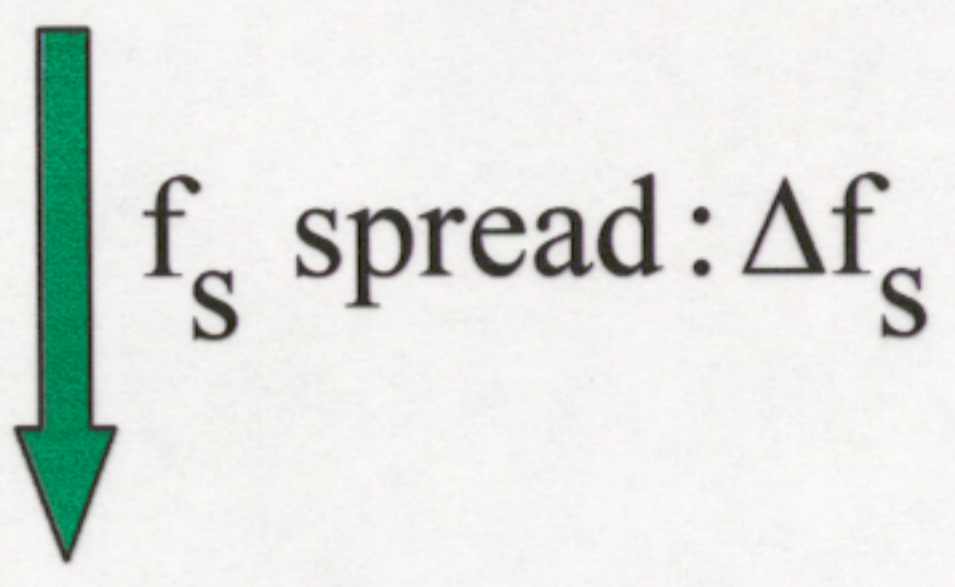
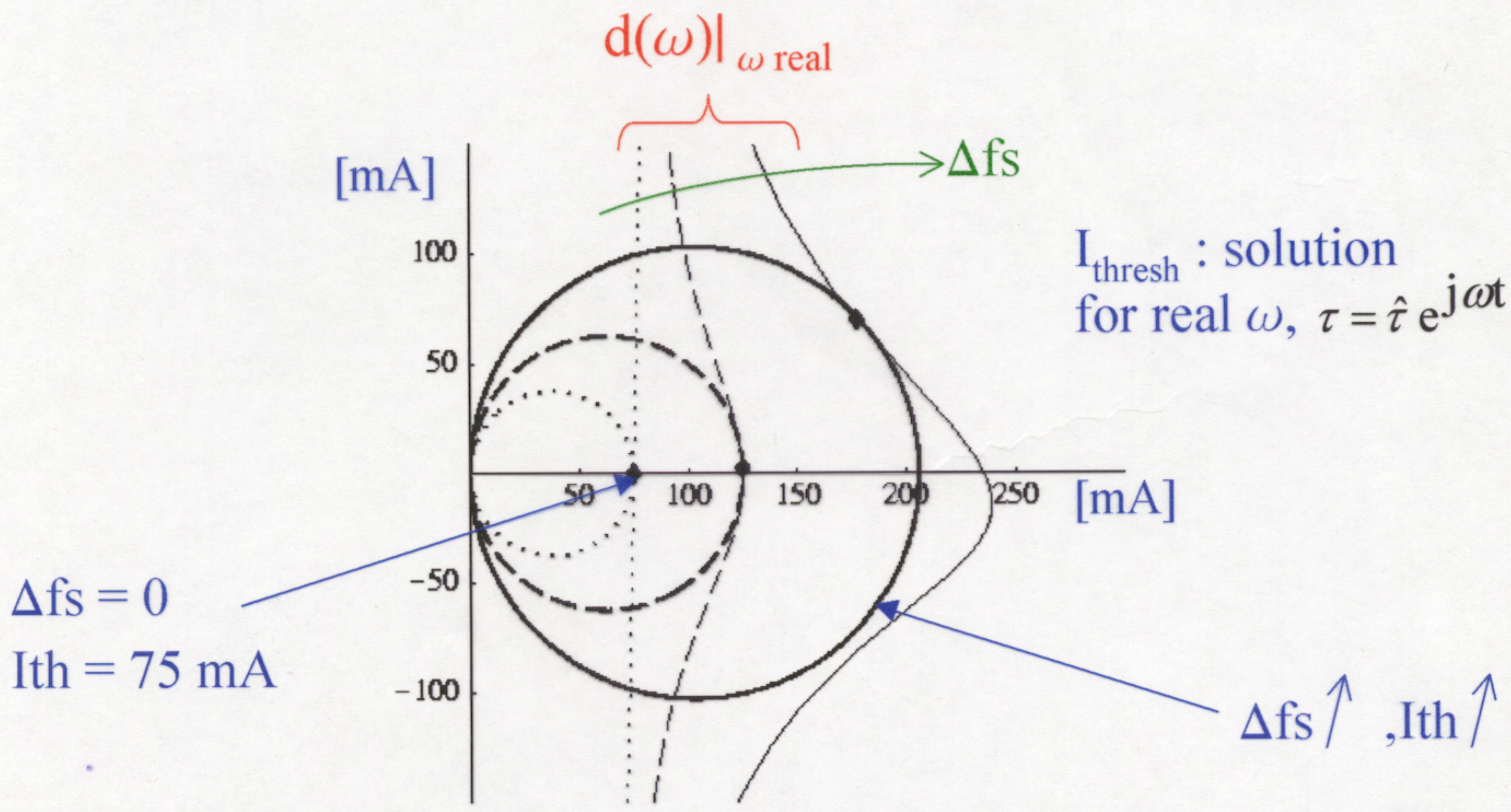


Landau Damping

$$I_{threshold} = \frac{2 f_s T_0 E_0 / e \delta_n}{\alpha f_{HOM} R_{HOM}}$$



$$\underbrace{I_{BEAM}}_{\text{scale}} \underbrace{\frac{R_{HOM} \cos \psi e^{j\psi}}{R_{HOM}}}_{\text{unit circle}} = \underbrace{\left\{ \frac{j\alpha 2\pi f_{HOM} R_{HOM}}{T_0 E_0 / e} \int \frac{\rho(\omega'_s) d\omega'_s}{\omega_s'^2 - \omega^2 + 2\delta_n j\omega} \right\}^{-1}}_{d(\omega)}$$



Harmonic Cavity for the ESRF ? (*continued*)

- Tracking simulations → **unchanged energy spread** with HC / μ -wave instability
- **More sensitive to HOM driven Longitudinal Coupled Bunch Instabilities:**

