Current-Feedback Amplifiers
$z = \frac{1}{1 + \text{transimpedance gain}}$ (like open-loop gain in VFA)

$\mathcal{L} \approx \mathcal{L} \cap O \mathcal{L}$

in is mirrored into the output section

in 0 during quiescent operation (only error current)

\text{billity:} Low impedance and high current sourcing/sinking capability

$\omega_n$:

$\omega_n$: High input impedance and low bias current

$\omega_n$:

follow unconditionally

$\omega_n$
\[
\frac{\partial H}{\partial f} + 1 \approx \frac{z}{f} + 1 \left( \frac{\partial H}{\partial f} + 1 \right) = \frac{z + \frac{\partial H}{\partial f}}{1 + \frac{\partial H}{\partial f}} = \frac{S_\alpha}{\mathcal{I} \cap \mathcal{O}_\alpha}
\]

\[\partial H \ll z \quad \text{Assuming} \quad \bullet\]

\[\mathcal{I} \cap \mathcal{O}_\alpha \left( \frac{z}{f} + \frac{\partial H}{f} \right) = \left( \frac{\partial H}{f} + \frac{\partial H}{f} \right) S_\alpha \quad \bullet\]

\[\partial H \left( \frac{z}{\mathcal{I} \cap \mathcal{O}_\alpha} + \frac{\partial H}{s_\alpha - \mathcal{I} \cap \mathcal{O}_\alpha} \right) = S_\alpha \quad \bullet\]

\[u_z = \mathcal{I} \cap \mathcal{O}_\alpha \quad \bullet\]

\[0 \approx \partial H \quad u_\alpha = \partial_\alpha \quad 0 = \partial \quad \text{Assume} \quad \bullet\]
$R_f$ is key for stability; optimal value for $R_f$ is about 1 kΩ.

$R_f$ should never be zero since then $\angle \theta$ would be infinite.

$\frac{R_f}{z} = \theta$ of loop gain $\angle \theta$.

Notice that stability is determined by loop gain $\angle \theta$.

Select bandwidth with $R_f$, gain with $R_C$.

$$\frac{\frac{R_C}{R_f} + 1}{\frac{R_f}{R_c}} + 1 = 0 \Rightarrow \angle \theta$$

Where

$$\frac{\frac{R_C}{R_f} + 1}{\frac{R_f}{R_c}} + 1 = (s)\angle \theta$$

$\frac{\frac{R_C}{R_f} + 1}{\frac{R_f}{R_c}} = \angle \theta$ since $\angle \theta$ is bandwidth.