

$$T^2 \times MCRB(v) = \frac{3}{8\pi^2 L_0^3} \frac{1}{E_s/N_0}$$

$$T^2 \times MCRB(f) = \frac{3}{2\pi^2 L_0^3} \frac{1}{E_s/N_0}$$

$$\text{var}(\hat{f}_o) \geq \frac{12F_s^2}{(2\pi)^2 SNR \times N(N^2 - 1)} \quad (\text{Hz}^2)$$