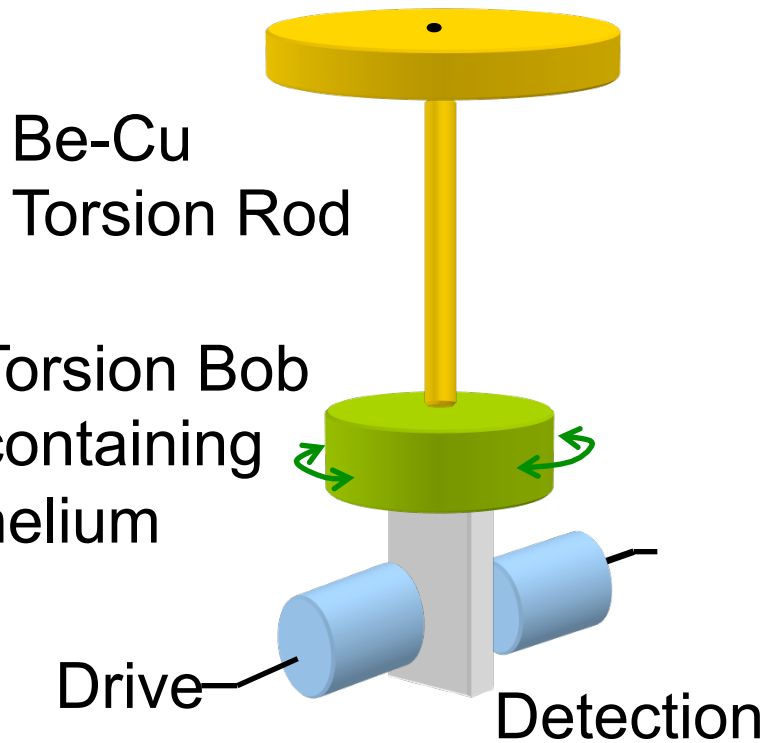
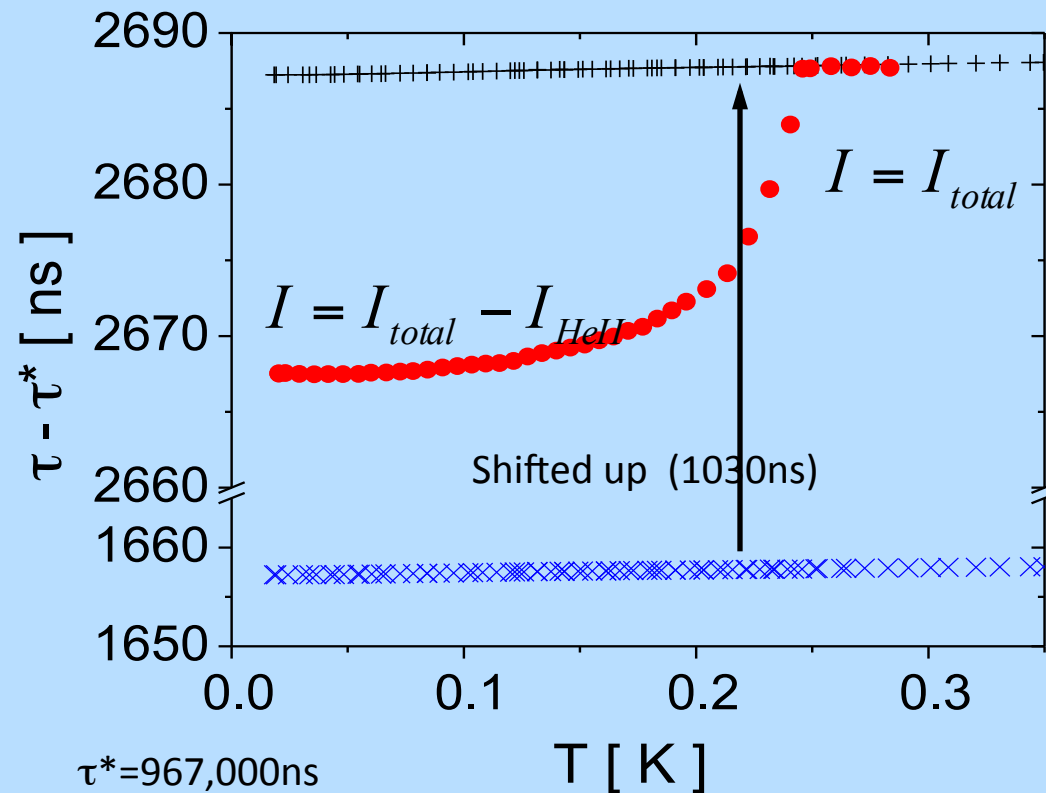


# Torsional oscillator ideal for detection of superfluidity



$$\tau_o = 2\pi \sqrt{\frac{I}{K}}$$

$$I_{total} = I_{torsionbob} + I_{helium}$$



Resonant period ( $\tau_o$ )  $\sim$  1 ms

# $\lambda$ -transition in liquid $^4\text{He}$

$$\rho = \rho_s + \rho_n, \quad \rho_s = \psi^* \psi, \quad \psi = |\psi| e^{i\varphi}$$

$$\text{near transition } \frac{\rho_s}{\rho} = k_0 t^\xi \text{ with } \xi = 0.67, \quad t = (T_\lambda - T)/T_\lambda$$

