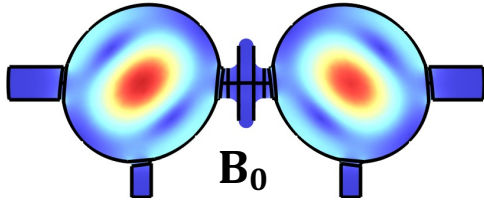
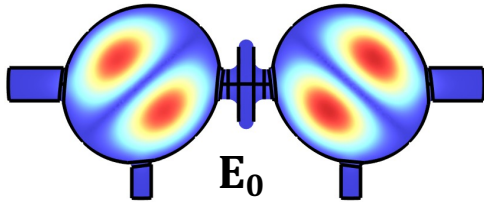


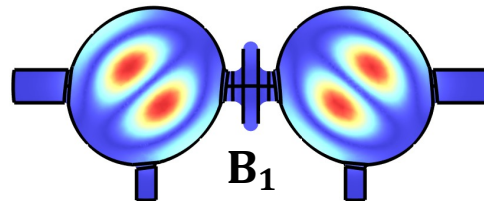
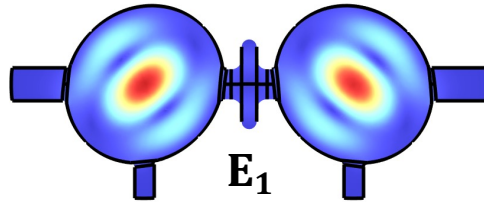
MAGO Cavity For Axions

Axion Coupling

(GW) Pump mode:
 $\text{TE}_{011}^{\text{sym}} \rightarrow 2.10 \text{ GHz}$



Signal mode:
 $\text{TM}_{111}^{\text{sym}} \rightarrow 2.87 \text{ GHz}$



Coupling Coefficient:

$$\eta_{axion} \sim \int_V \mathbf{B}_0 \cdot \mathbf{E}_1 \approx 0.7$$

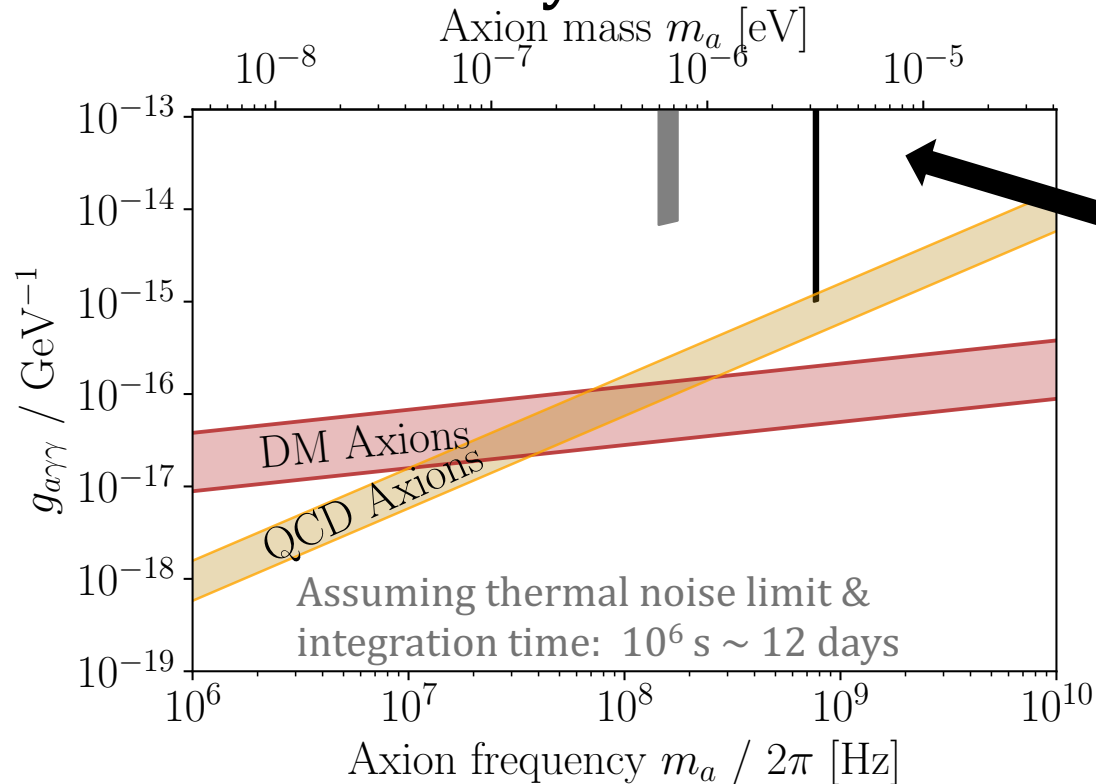
$$\Delta\omega \cong 770 \text{ MHz} \sim 3.2 \mu\text{eV}$$

Next best: $\eta_{axion} = 0.04$ @ 2.26 GHz

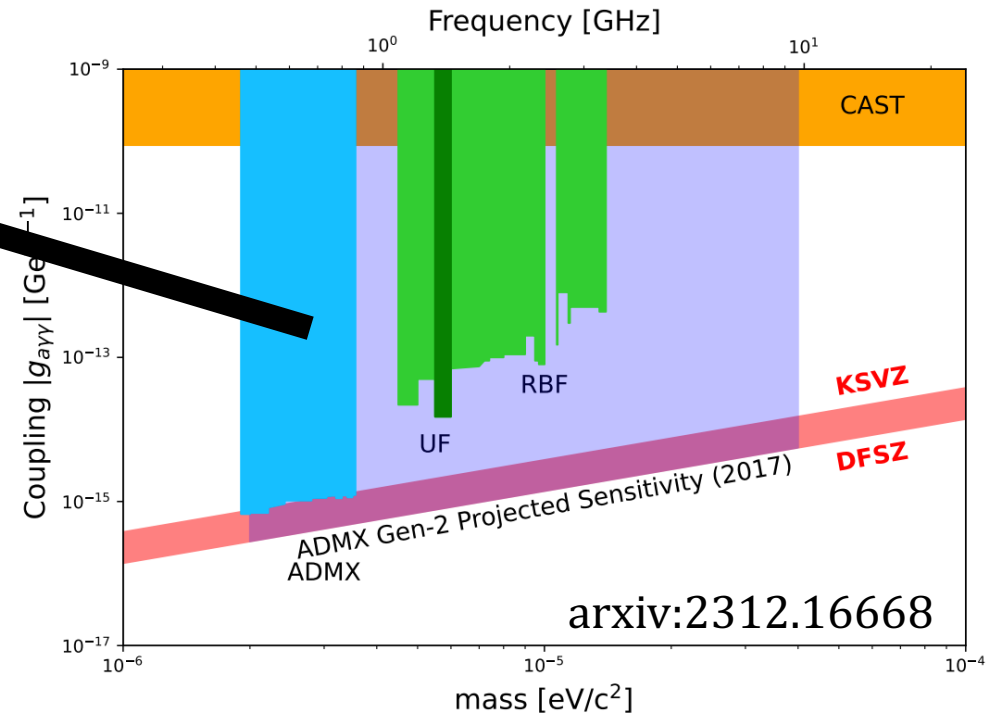
Or down-conversion to $\eta \approx 0.5$ @ 1.3 GHz ($\text{TM}_{011}^{\text{sym}}$)

Axion Sensitivity (On Resonance)

MAGO Cavity:

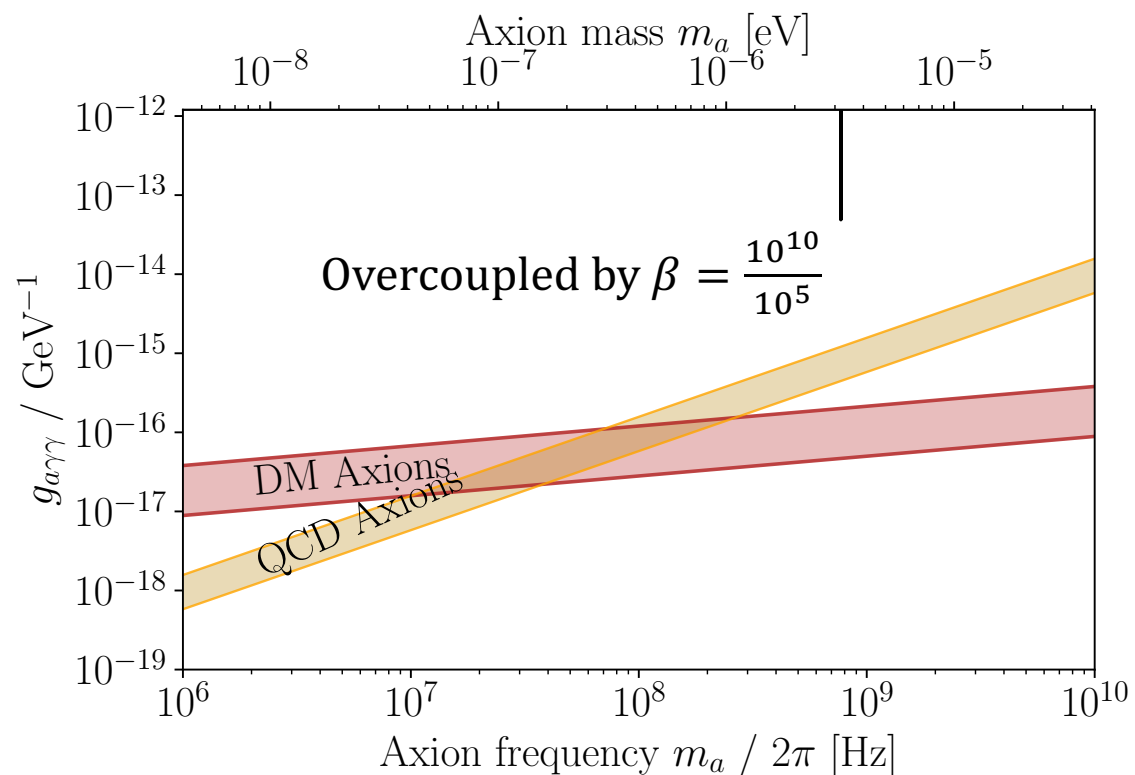


ADMX:



→ Best MAGO sensitivity in ADMX range

Broadband Search



thermal (readout + emission) noise limit

→ Bandwidth $\mathcal{O}(10^5 \text{ Hz})$ at reduced sensitivity

(not visible with this x-axis)

zoomed in:

