

# New Results from HAYSTAC's Search for Dark Matter Axions

*Thursday 27 March 2025 16:05 (15 minutes)*

The Haloscope At Yale Sensitive To Axion CDM (HAYSTAC) experiment is a microwave cavity search which is actively probing QCD axions with masses  $\lesssim 10\mu\text{eV}$ . In this talk, I will present recent results from HAYSTAC's Phase II search for QCD axions between  $16.96 - 19.46\mu\text{eV}$ . These results are the widest search to date to achieve a quantum enhanced scan rate from a squeezed state receiver and include new data covering  $1.71\mu\text{eV}$  of previously unexplored parameter space with sensitivity to QCD axions with axion-photon coupling of  $\sim 3 \times |g_\gamma^{KSVZ}|$ . I will also discuss upgrades in development to facilitate further searches for axions beyond  $20\mu\text{eV}$ .

**Author:** JEWELL, Michael (Yale University)

**Presenter:** JEWELL, Michael (Yale University)

**Session Classification:** SESSION 19: Direct detection: Ultra-Light DM (Axions, ALPs, WISPs) searches