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Accelerating dark matter axion searches with quantum measurement and cavity innovation with HAYSTAC Experiment:

Friday, 10 November 2023 09:15 (15 minutes)

The HAYSTAC Collaboration is actively searching for axion cold dark matter using a resonant microwave cavity and quantum squeezed state receiver. With axion mass and coupling strength unknown, a crucial metric is the scanning rate across their parameter space. Recent advancements in squeezed state receivers have doubled the scanning rate. This talk will discuss HAYSTAC's current instrumentation and future plans to explore higher axion masses.

Early Career

Yes

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Session Classification: RDC8

Track Classification: RDC Parallel Sessions: RDC8: Quantum and Superconducting Sensors