



Contribution ID: 22

Type: 5 min talk

## High-mass axion searches with novel cavity designs at IBS-CAPP

*Tuesday, 17 September 2024 17:15 (5 minutes)*

The axion was postulated as a solution to both the strong CP problem and the dark matter mystery. Among the various experiments designed to detect axion dark matter signal, the cavity haloscope is recognized as the most sensitive method. However, its sensitivity decreases significantly at higher mass regions due to volume loss. To address this issue, the Center for Axion and Precision Physics Research of the Institute for Basic Science (IBS-CAPP) has been developing novel cavity designs, such as the multiple cell cavity, wheel mechanism, and tunable photonic crystal. These designs have been successfully demonstrated widely adopted in sensitive searches for high-mass axions. In this presentation, we will review the cavity designs and present the recent experimental results using these designs.

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**Session Classification:** Afternoon 2