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CULTASK, Axion Experiment at CAPP in Korea

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CAPP's flagship axion experiment, CULTASK has been built on a low vibration facility at Munji campus of KAIST in Korea. We have so far installed 4 dilution refrigerators with two 8T superconducting magnets, which allow us to explore axion mass range of 2~2.5 GHz and 1.35~1.6 GHz, respectively. A resonant cavity (10 cm OD) with a sapphire tuning rod driven by piezoelectric actuator system was successfully cooled down below 30 mK and showed very high unloaded Q-factor (~120,000) even under 8T magnetic field. RF receiver employs 1K HEMT amplifier out of the cavity, but the design is flexible enough to replace it with SQUID amplifier when R&D is completed soon. I will present the status and possibly the very first data of CULTASK and our future plans. I will also discuss about the progress of our R&D projects, development of superconducting cavities and SQUID amplifiers.

Summary

The status and progress of CULTASK axion experiment at IBS/CAPP is presented.

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