

Abstract Submitted  
for the APR18 Meeting of  
The American Physical Society

**The First data of axion mass range around 2.5 GHz at CAPP in Korea**<sup>1</sup> DOYU LEE, KAIST , WOOHYUN CHUNG, OHJOON KWON, SOOHYUNG LEE, JIHOON CHOI, ANDREI MATLASHOV, IBS/CAPP, JINSOO KIM, DANHO AHN, KAIST, YANNIS SEMERTZIDIS, IBS/CAPP, KAIST, CAPP TEAM — The flagship axion experiment of CAPP (Center for Axion and Precision Physics Research) of IBS in Korea, CULTASK (CAPP's Ultra Low Temperature Axion Search in Korea) has been built on a low vibration facility at Munji campus of KAIST (Korea Advanced Institute for Science and Technology). We have prepared one complete direct-search axion experiment with a powerful dilution refrigerator and a 8T superconducting magnet, ready to explore an axion mass range of 2~2.5 GHz. A resonant cavity (10 cm OD) with a sapphire tuning rod driven by a piezoelectric actuator system was successfully cooled down below 40 mK and showed a very high unloaded Q-factor ( $\sim 130,000$ ) even under 8T magnetic field. The RF receiver employs a 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 results of physics data runs in this mass range and our future plans.

<sup>1</sup>This work was supported by IBS-R017-D1-2018-a00.

Doyu Lee  
KAIST

Date submitted: 12 Jan 2018

Electronic form version 1.4