Abstract Submitted for the APR18 Meeting of The American Physical Society

Superconducting cavity in CAPP's dark matter axion experiment DANHO AHN, Korea advanced institute of science and technology, Department of Physics, Daejeon, Korea, OHJOON KWON, Center for Axion and Precision Physics Research, Institute for Basic Science, Daejeon, Korea, DOJUN YOUM, Korea advanced institute of science and technology, Department of Physics, Daejeon, Korea, WONJUN JANG, Center for Quantum Nano Science, Institute for Basic Science, Seoul, Korea, WOOHYUN CHUNG, Center for Axion and Precision Physics Research, Institute for Basic Science, Daejeon, Korea, DOYU LEE, JINSU KIM, Korea advanced institute of science and technology, Department of Physics, Daejeon, Korea, YANNIS SEMERTZIDIS, Center for Axion and Precision Physics Research, Institute for Basic Science, Daejeon, Korea — The IBS Center for Axion and Precision Physics Research (CAPP) in Korea searches for axions using a tunable resonant cavity to enhance axion to photon conversion rates to a detectable level when the cavity resonates at the axion mass. The superconducting coat on the inner surface of the cavity could raise the Q-factor significantly, among other possible improvements to enhance the sensitivity of the experiment, but the presence of the high magnetic field prevents it since the type I superconductor loses superconductivity easily even with a small amount of field. I will present the results of measuring Q-factors of the cavity by coating NbTi with RF magnetron sputtering method and applying YBCO tapes to the inner surface of the cavity.

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Date submitted: 12 Jan 2018

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