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## First Results of DANCE from Long-Term Observation

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Axions are one of the well-motivated candidates for dark matter, originally proposed to solve the strong CP problem in particle physics. Dark matter Axion search with riNg Cavity Experiment (DANCE) is a new experimental project to search for axion dark matter. We aim to detect the rotation and oscillation of optical linear polarization caused by axion-photon coupling with a bow-tie cavity. DANCE can improve the sensitivity to the axion-photon coupling constant in the axion mass range of  $10^{-17} \text{ eV} < m_a < 10^{-11} \text{ eV}$  by several orders of magnitude compared to the best upper limits at present. A prototype experiment DANCE Act-1 is ongoing to demonstrate the feasibility of our method. We will report the first results of DANCE Act-1 from 24-hour observation in this workshop. We found no evidence for axions and set 95% confidence level upper limits on the axion-photon coupling  $g_{ag} \approx 8 \times 10^{-4} \text{ GeV}^{-1}$  in  $10^{-14} \text{ eV} < m_a < 10^{-13} \text{ eV}$ . Although the bounds did not exceed the current best limits, this work is the first demonstration of axion dark matter search with an optical ring cavity.

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**Session Classification:** Morning session-2