

Title: Tokyo axion helioscope

Name: Makato Minowa

Affiliation: University of Tokyo

Email: minowa@phys.s.u-tokyo.ac.jp

Abstract

Present status of the Tokyo axion helioscope is presented. The axion helioscope consists of a dedicated cryogen-free 4T superconducting magnet with an effective length of 2300 mm and PIN photodiodes as x-ray detectors. Solar axions, if exist, would be converted into X-ray photons through the inverse Primakoff process in the magnetic field. Conversion is coherently enhanced even for massive axions by filling the conversion region with helium gas. In the first and the second phase measurements, we set upper limits of $6.10 \times 10^{-10} \text{GeV}^{-1}$ to axion – photon coupling constant for the axion mass less than 0.27 eV. We have been actively preparing for a new phase of the experiment and we are now able to go to measurement of still higher mass region. The latest status as of the time of Patras workshop will be reported.