Joint seminar of the NPI of the CAS

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KATRIN experiment operation and its results

The KATRIN experiment is designed to measure the effective mass of electron antineutrino by the precise measurement of the tritium beta spectrum endpoint region. For this, KATRIN uses a MAC-E filter spectrometer with a diameter of 10 meters and a windowless tritium source separated from the vacuum of the spectrometer by a pumping section and a cryogenic freeze-out section. 83Rb/83mKr sources, which are used for energy calibration, are provided to KATRIN by NPI CAS. Data measured by KATRIN have also been used to search for sterile neutrinos, and an upgrade specifically designed for this search is planned after the measurement of the active neutrino mass concludes. Most recent world record limit on the neutrino mass, <0.8 eV/c^2, was pulished by KATRIN in 2022. A new result with roughly five times higher statistics is being prepared for publication.

The seminar will take place on Thursday, May 25, 2023 at 10:00 a.m. in the NPI conference room.