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Project KATRIN first result on the neutrino mass.

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For the KATRIN collaboration
The KArlsruhe TRItium Neutrino experiment (KATRIN) is designed to improve the existed direct limit on the effective electron antineutrino mass by an order of magnitude, with a projected sensitivity of 0.2 eV/c2 at the 90% confidence level. To achieve this KATRIN is using a windowless gaseous tritium source containing up to 100 GBq activity and electrostatic spectrometer with adiabatic magnetic collimation with resolution up to 1 eV. In spring 2019 first 521.7 hour long data taking run was performed. Data analysis provided new upper limit on the electron antineutrino effective mass 1.1 eV (90% confidence level), published at Phys. Rev. Lett. 123, 221802, November 2019. In 2020 Neutrino-4 experiment presented evidence of a sterile neutrino signal observation of with parameters $\sin^2 2\theta_{14} \approx 0.35 \pm 0.07 (5\sigma)$ and $\Delta m^2_{14} \approx (7.3 \pm 0.7)$eV2. KATRIN experiment is sensitive to sterile neutrino with these parameters. Last results from KATRIN project and common analysis with Neutrino-4 are presented.

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