



Search for keV-scale sterile neutrinos with the first light of KATRIN

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Motivation

KATRIN main goal: determination of the neutrino mass ~ sub-eV-scale

KATRIN extended goal: search for sterile neutrinos ~ keV-scale

Statistical sensitivity to sterile neutrinos:

- potential to set world best laboratory limit
- probe parameter space interesting for cosmology





Using KATRIN, as it is' – the phase-0 measurement

Modified magnetic field to reduce rate and minimize all systematics



<u>Using the first tritium data of KATRIN (last 2 keV)</u>

Very successful measurement of first T_2 - β electrons



Outlook – the TRISTAN detector Silicon drift detector design Deadlayer: < 100 nm Final system: ~3500 pixels (21 x 168 pixel modules) Prototype: 7 pixel n+ anode p+ back contact Prototype measurements at Troitsk: ch16 Data Measurement

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We acknowledge the support of Helmholtz Association (HGF), Ministry for Education and Research BMBF (05A17PX3, 05A17VK2, and 05A17WO3), Helmholtz Alliance for Astroparticle Physics (HAP), and Helmholtz Young Investigator Group (VH-NG-1055) in Germany; Ministry of Education, Youth and Sport (CANAM-LM2011019), cooperation with the JINR Dubna (3+3 grants) 2017–2019 in the Czech Republic; and the Department of Energy through grants DEFG02-97ER41020, DE-FG02-94ER40818, DE-SC0004036, DE-FG02-97ER41033, DE-FG02-97ER41041, DE-AC02-05CH11231, and DE-SC0011091 in the United States.

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