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The Result of the Neutrino-4 Experiment and the Cosmological Constraints on the Sterile Neutrino

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We present a short discussion of the Neutrino-4 experimental results and the results of other experiments searching for the sterile neutrino. We estimated the contribution of the sterile neutrino with parameters $\Delta m_{14}^2 \approx 7.3\text{eV}^2$ and $\sin^2 2\theta_{14} \approx 0.36$ obtained in the Neutrino-4 experiment to the energy density of the Universe. We address the contradiction between the measured sterile neutrino parameters and the constraints on the sterile neutrino from cosmology. With this article, we want to draw attention to the problem of the contradiction between experiment and theory, in order to inspire the search for theoretical models that include a sterile neutrino with mass in the region of several eV, and to the necessity to sufficiently increase the precision of the experiment.

Primary author(s) : SEREBROV, Anatolii (NRC "Kurchatov Institute" - PNPI); ZHEREBTSOV, Oleg (NRC «Kurchatov Institute» - PNPI); CHAIKOVSKII, Mikhail (PNPI); Mr. SAMOILOV, Rudolf (NRC "KI" - PNPI)

Presenter(s) : SEREBROV, Anatolii (NRC "Kurchatov Institute" - PNPI)

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