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Global status of light sterile neutrinos

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Sterile neutrinos are singlets of the Standard Model gauge symmetries which do not have the standard weak interactions but can couple to the active neutrinos through the Lagrangian mass term. The possible existence of sterile neutrinos is currently a hot topic of theoretical and experimental research which could provide valuable information on the physics beyond the Standard Model.

I shall review the global status of the light sterile neutrinos at the eV mass scale.

The reactor, gallium and Liquid Scintillator Neutrino Detector anomalies are briefly described and interpreted as indications of the existence of short-baseline oscillations which require the existence of light sterile neutrinos. The global fits of short-baseline oscillation data in $3 + 1$ and $3 + 2$ schemes are discussed, together with the implications for β -decay, neutrinoless double- β decay and cosmological measurements. Finally, I shall conclude with a summary of future perspectives.

S. Gariazzo, C. Giunti, M. Laveder, **Y. F. Li** and E. M. Zavanin, "Light sterile neutrinos" (Topical Review and Featured Article) *J. Phys. G* **43**, 033001 (2016) [arXiv:1507.08204].

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