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ACTIVE AND STERILE NEUTRINO OSCILLATIONS INSIDE THE SUN IN A PHENOMENOLOGICAL (3+1+2)-MODEL

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The phenomenological model with three active and three light sterile neutrinos is considered taking into account terrestrial experimental data, which indicate anomalies at short distances beyond the minimally modified Standard Model with three massive active neutrinos [1, 2, 3, 4]. One of the sterile neutrinos is assumed in this work to have comparatively different mass versus masses of two others, that is corresponding to a (3+1+2)-model of neutrinos. Model parameters values used for the description of oscillations of both active and sterile massive neutrinos into the Sun are chosen. Oscillation characteristics of solar neutrino together with sterile neutrino contributions have been evaluated taking into account the neutrino interaction with the matter inside the Sun. We use the standard solar model (SSM) [5, 6, 7]. Results obtained are in harmony with observational data and can be used for development of sterile neutrinos models.

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Section

Neutrino physics and nuclear astrophysics

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