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Determination of neutrino oscillation parameters of transitions to sterile states in the BEST-2 experiment

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In measurements with intense artificial sources of monochromatic neutrinos on gallium targets, a capture rate equal to 0.80 ± 0.05 of the expected was obtained. The measured lack of capture rate is known as the gallium anomaly (GA). Neutrino oscillation transitions with large values of the parameter Δm^2 ($\sim 1 \text{ eV}^2$) are considered a possible cause of GA. In the proposed BEST-2 experiment, the GA will not only be tested with high accuracy, but also the parameters of the oscillations will be measured if they are in the sensitivity range of the experiment. In the BEST-2 experiment, a gallium target consisting of 50 tons of metallic gallium and divided into 3 independent zones will be irradiated with neutrinos from a ^{65}Zn source.

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