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Searching for bosonic dark matter with iDREAM neutrino detector at the Kalinin Nuclear Power Plant

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Bosonic dark matter search results with neutrino detector iDREAM at Kalinin Nuclear Power Plant are presented. Using accurate data on composition of the active core of VVER-1000 nuclear reactor and fission fractions of primary fissile isotopes, the γ -radiation energy spectrum in the active core is calculated. Assuming that the dark bosons can be produced in the active core via γ -scattering on electrons and can be detected via an inverse process inside the iDREAM detector, experimental bounds on the coupling constant g_X between the dark boson and Standard Model charged current are derived.

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