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Geo-neutrino program at Baksan Neutrino Observatory

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A new neutrino program has been recently lunched at Baksan Neutrino Observatory. It is planned to deploy a 10-kiloton scale detector based on liquid scintillator in the existing shaft at a depth of 4800 m.w.e.. Baksan underground laboratory is profitable in terms of low reactor neutrino flux and well measured backgrounds originating from natural radioactivity. Therefore, the experiment is well suited for geo-neutrino measurements and will enforce the world-wide effort. Besides that this detector has a good potential for registration of solar neutrinos and neutrinos from supernova explosions.

As a preparatory stage, a detector prototype with target mass of 0.5 ton and equipped with 20 10-inch PMTs is currently under construction. Another prototype of 5-ton target mass is planned for the next year. The expected performance of the first prototype and the prospects of the future multi-kiloton detector will be reported.

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