Poster session 1 - Monday 4 July

P1.080 **Status of experiment NEUTRINO-4 search for sterile neutrino**

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In connection with the question of possible existence of sterile neutrino the laboratory on the basis of SM-3 reactor (Dimitrovgrad, Russia) was created to search for oscillations of reactor antineutrino. In the middle of 2015 the second prototype of a neutrino detector with liquid scintillator volume of 350 l was installed. It can be moved at the distance of 6-11m from the reactor core inside passive shielding. There are active 4π shielding around detector and the moveable active shielding (umbrella) on the roof of passive shielding. This prototype of detector consists of 16 sections (4x4). This structure allows detect gamma rays 511keV from positron annihilation in the neighbour section. The part of such type events is about 1/3 with respect to total antineutrino event for this structure. It is useful criteria for identification of antineutrino events from counting rate difference: reactor on – reactor off. Test measurements of $1/R^2$ dependence of a reactor antineutrino flux (reactor on – reactor off) on the distance (R) from a reactor core have been made. The dependence consists from 10 points and cover distance from 6.5 m to 11 m. After half year collecting statistics the accuracy of measurements of first point at 6.5 m is 10%. The spectra of prompt signal for neutrino events are also presented.

The full-scale detector with volume of liquid scintillator 3 m^3 (5x10 section) is in the stage of preparation. It will allow obtain the statistic accuracy of measurements at the distance 6.5 m up to 1.5 % after 2 years of measurements.