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Spectroscopy of conversion electrons with LN2 cooled Si(Li) detector at the TATRA spectrometer

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183Hg -> 183Au decay was studied using the TATRA system. Conversion electrons were detected with the LN2 cooled windowless Si(Li) detector. The tape system was operated at 8E-8 mbar, therefore no deposition of mist on the surface of cold detector was observed during the run. The FWHM of 1.3 keV for conversion electrons above 100 keV was achieved, which is almost comparable with previous measurement, which employed magnetic spectrometer. Simultaneously, the gamma rays were detected with array of coaxial and novel Broad Energy germanium (BEGe) detectors. Very good energy resolution of BEGe detector was used to construct the level scheme of 183Au, which has large density of excited states at low energy. In the talk, fundaments of the shape coexistence in odd-Au isotopes, technical details of system for detection of conversion electrons and level scheme of 183Au will be presented.

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