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BiPo prototype measurements for SuperNEMO

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The SuperNEMO project requires high radiopurity levels of the 2beta source foils: 10 uBq/kg in 214Bi and 2 uBq/kg in 208Tl. Today, best detectors can't reach these levels for big masses in a reasonable time. That's why the collaboration decided to build a dedicated detector for these measurements. Looking for BiPo processes (beta decay + delayed alpha decay) the BiPo detector has to measure these radiopurity requirements for 10 m2 of 40 mg/cm2 selenium foils (4 kg) in a month. The modular BiPo1 prototype, dedicated to background studies, started in June 2007 and is completed since February 2008. BiPo1 demonstrated the feasibility of the measurement and gave a very good preliminary sensitivity : A(208Tl) < 7.5 uBq/kg for a total BiPo detector.

Auteur principal: M. BONGRAND, Mathieu (LAL - Universite Paris-Sud 11)

Orateur: M. BONGRAND, Mathieu (LAL - Universite Paris-Sud 11)

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