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# Proton capture on 91Nb in ESR

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We intend to submit a proposal to measure the reaction 91Nb(p,g)92Mo in ESR as a continuation of the proton-capture campaign that has been very successful in the recent past. 91Nb is a radionuclide, which in a first step has to be produced in FRS using a primary beam of 94Mo or similar. Furthermore, accumulation, cooling and deceleration in the ESR down to energies of 5-10 MeV/u are needed, as it was already demonstrated for fragments of 118Te in E127.

The solar amounts of 92,94Mo and 96,98Ru are not reproduced by current models of explosive nucleosynthesis, which prone to the large nuclear physics uncertainties connected to unstable nuclei. The reaction 91Nb(p,g) is one of the key reactions of the nucleosynthesis around this long-standing Mo/Ru anomaly. It is the main source of uncertainty for the production of 92Mo in the gamma process and also a central part of the 92Nb/92Mo chronometer. By direct measurement of the reaction cross-section, the tremendous uncertainties in the gamma process yields can be diminished and a reliable application of the chronometer feature is in reach. Both of these targeted results represent a major step towards clarifying the mysterious origin of 92Mo and its nuclear neighborhood.

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