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Towards ^{100}Sn along the N=Z line

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^{100}Sn is the last double magic N=Z nucleus that remains stable considering particle emission. Studying its beta decay is challenging and interesting [1-3], since it is very difficult to produce and the beta decay of ^{100}Sn shows the lowest estimated Logft or the largest B(GT) (superallowed Gamow-Teller (GT) transition) in the entire nuclide chart. This decay also holds the key for a better understanding of the quenching of the g_A constant in the nuclear medium. Up to know the limited production has constrained the possibility of establishing a firm level scheme populated in the beta decay. The present level scheme of the beta decay into ^{100}In is based on very limited gamma-gamma coincidences and on a comparison with shell model predictions [1,2]. We propose here to further study the beta decay of ^{100}Sn using the upgraded intensities of the primary beams at RIFB and the improved efficiency of the new gamma array.

Around ^{100}Sn, it is also worth studying further the beta decay of ^{98}Cd. The only data available related to this decay comes from a study performed at ISOLDE in 1992 with limited efficiency [4]. ^{98}Cd beta decay is one of the cases which resembles better the ^{100}Sn decay. Recent mass measurements in the region [5] seem to fix partially the conflict of the two different B(GT) values obtained by Hinke et al. [1] and Lubos et al. [2], by looking at the trends predicted by shell model calculations and relying on the beta strength of this decay determined at ISOLDE [4]. Considering the relevance of this data, a new study of its beta decay using a more efficient setup is also desirable.

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