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Study of the β-decay of ^{11}Li at ISAC/TRIUMF C. MATTOON, F. SARAZIN, Colorado School of Mines, C. ANDREOIU, P.E. GARRETT, G.F. GRINYER, C.E. SVENSSON, University of Guelph, A. ANDREYEV, G.C. BALL, R.S. CHAKRAWARTHY, G. HACKMAN, A.C. MORTON, C. PEARSON, M.B. SMITH, Triumf, R.A.E. AUSTIN, Saint Mary's University, D. CROSS, D. MELCONIAN, J. RESSLER, Simon Fraser University, E.S. CUNNINGHAM, J. DAOUD, University of Surrey, J. SCHWARZENBERG, University of Vienna — The β-decay of ^{11}Li was investigated at ISAC/TRIUMF with the 8π spectrometer, an array of 20 Compton-suppressed HPGe detectors. Doppler-broadened line shapes appear in the β-decay spectrum, arising from the decay of excited states of ^{10}Be populated by β- delayed one-neutron emission. A Monte Carlo simulation for these line shapes was developed, permitting the analysis of excited states in ^{10}Be and neutron emitting states in ^{11}Be . This experiment improves on a previous work [F. Sarazin et al., Phys. Rev. C 70 (2004) 031302R] through greater ^{11}Li yield and the addition of Sceptar, a plastic scintillating array in the inner volume of the 8π. Analysis of the higher quality line shapes from the new experiment should help resolve discrepancies observed between the previous work and [Y. Hirayama et al., Phys.Lett. B 611 (2005) 239] (an experiment using polarized ^{11}Li and time-of-flight neutron detectors) and possibly lead to new insights in the β-decay of ^{11}Li. This work is partially supported by the US Department of Energy through Grant/ Contract No. DE-FG03-93ER40789.

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