^{53}Ca

Langevin et al. reported the discovery of ^{53}Ca in "^{53}K, ^{54}K And ^{53}Ca: Three New Neutron Rich Isotopes" (1983La23). Iridium was fragmented by 10 GeV protons from the CERN synchrotron to produce neutron rich potassium isotopes, which then decayed into calcium isotopes. Neutrons were measured in coincidence with β-rays after the potassium was mass separated. "This work gives evidence for three new K and Ca isotopes and provides further information on half-lives and P_n values." The measured half-life of 90(15) ms is somewhat smaller than the recent measurement of 230(60) ms (2008Ma01). Mantica et al. analyzed their data with both half-life values and found the fit for the longer half-life slightly better based on the R^2 regression analysis. In addition, the authors mentioned that a second β-decaying state could have contributed to the longer half-life value (2008Ma01).

Adapted from reference (2011Am01)

1983La23 M. Langevin, C. Detraz, D. Guillemaud-Mueller, A. C. Mueller *et al.*, Phys. Lett. B **130**, 251 (1983).

2008Ma01 P. F. Mantica, R. Broda, H. L. Crawford, A. Damaske *et al.*, Phys. Rev. C **77**, 014313 (2008).

2011Am01 S. Amos, J. L. Gross, and M. Thoennessen, At. Data Nucl. Data Tables **97**, 383 (2011).

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