^{12}Li

The discovery of ^{12}Li is credited to the 2010 paper "First observation of excited states in ^{12}Li" by Hall et al. (2010Ha04) A secondary 53.4 MeV/u ^{14}B beam from the Coupled Cyclotron Facility at Michigan State University was used to bombard a beryllium target producing ^{12}Li in a two-proton removal reaction. The Modular Neutron Array was used to measure neutrons in coincidence with the ^{11}Li fragments. Resonances in ^{12}Li were reconstructed from the invariant mass: "Two excited states at resonance energies of 250±20 keV and 555±20 keV were observed for the first time."

This assignment was changed from Yu. Aksyutina et al. (2008Ak03) where ^{12}Li was populated in the reaction ^{1}H(^{14}Be,2pn)^{12}Li simultaneously with the discovery of ^{13}Li. However, it was recently pointed out (2013Ko03) that the ^{12}Li data could have been contaminated by misidentified low energy two-neutron decay events from ^{13}Li invalidating the extracted scattering length for ^{12}Li. This interpretation is also supported by the analysis of two-neutron events from the decay of ^{26}O which was performed with the same setup as the ^{12}Li experiment (2013Ca18).

The instability of ^{12}Li was demonstrated by Bowman in 1973 (1973Bo30).

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