^{20}B

The discovery of ^{20}B was reported in the 2018 paper "First Observation of ^{20}B and ^{21}B" by Leblond et al. (2018Le18). A 345 MeV/nucleon ^{48}Ca beam from the Radioactive Isotope Beam Factory (RIBF) of the RIKEN Nishina Center irradiated a 20 mm thick beryllium target to produce secondary beams of ^{22}N and ^{22}C which were separated with the BigRIPS fragment separator. These isotopes impinged on a secondary 1.8 g/cm^2 carbon target located at the SAMURAI spectrometer. Unbound resonant states were then reconstructed from fragments detected behind the SAMURAI superconducting dipole magnet and neutrons measured in the NEBULA neutron array. "Two-proton removal from ^{22}N populated a prominent resonancelike structure in ^{20}B at around 2.5 MeV above the one-neutron decay threshold, which is interpreted as arising from the closely spaced 1^-,2^- ground-state doublet predicted by the shell model."

The instability of ^{20}B was earlier deduced from the non-observation of the heavier isotone ^{21}C by Langevin et al. in 1985 (1985La03). Although not explicitly mentioned it was also directly confirmed by Ozawa et al. during the search for ^{21}B (2003Oz01).

Adapted from reference (2019Th02)

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