

${}^7\text{H}$

In 2003, Korshennikov et al. observed ${}^7\text{H}$ in “Experimental Evidence for the Existence of ${}^7\text{H}$ and for a Specific Structure of ${}^8\text{He}$ ” (2003Ko11). A cryogenic hydrogen target was bombarded with a 61.3 MeV/u secondary ${}^8\text{He}$ beam produced with the fragment separator RIPS at RIKEN, Japan. ${}^7\text{H}$ was produced in the reaction $p({}^8\text{He},pp){}^7\text{H}$ and identified by measuring the two protons in coincidence. “As seen in [the figure], the experimental spectrum increases near the $t + 4n$ threshold even more sharply than the most extreme curve. This provides a strong indication on the possible existence of ${}^7\text{H}$ state near the $t + 4n$ threshold.” The authors did not quote values for the decay energy or width (2003Ko11). The observation was later confirmed with a measurement of a resonance at 570_{-210}^{+420} keV (2007Ca28).

First evidence that ${}^7\text{H}$ was unbound respect to neutron emissions was reported in 1981 by Evseev et al. (1981Ev01).

Adapted from reference (2012Th01)

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2007Ca28 M. Caamano, D. Cortina-Gil, W. Mittig, H. Savajols *et al.*, Phys. Rev. Lett. **99**, 062502 (2007).
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