

^8He SPECTROSCOPY IN STOPPED PION ABSORPTION REACTION

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Level structure of heavy helium isotope ^8He is studied in the reactions of stopped pion absorption $^9\text{Be}(\pi^-,p)X$, $^{10}\text{B}(\pi^-,pp)X$, $^{11}\text{B}(\pi^-,pd)X$, $^{12}\text{C}(\pi^-,p^3\text{He})X$, $^{14}\text{C}(\pi^-,d^4\text{He})X$, $^{14}\text{C}(\pi^-,t^3\text{He})X$. The experiment was carried out at the LANL with a two-arm semiconductor spectrometer. The ground and excited states have been observed. The assumption that the excited state $E_x \approx 3$ MeV is a soft dipole mode is made. The states $E_x \approx 9.3$ MeV, 11.5 MeV, 12.2 MeV have been observed for the first time. Parameters of excited states have been compared with data of other experimental and theoretical works.