

## Beta-decay spectroscopy of proton-rich N=82 isotones

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The  $\beta$  decay of the heaviest known N=82 nuclide,  $^{156}\text{W}$ , was recently reported by Briscoe et al., and was found to exhibit a different decay pattern compared with  $^{152}\text{Yb}$  and their lighter isotones. This work investigates the  $\beta$  decays of the intermediate isotone  $^{154}\text{Hf}$  to learn about the evolution, with increasing atomic number, of the  $\beta$  decays of even-even N=82 isotones. Although a microsecond isomer in  $^{154}\text{Hf}$  has been identified by J. H. McNeill et al., and its half-life has been indirectly determined to be 2(1) s from the time differences between the  $\alpha$  decays of  $^{158}\text{W}$  and  $^{154}\text{Yb}$  by W.-D. Schmidt-Ott et al., the  $\beta$  decay of the ground state remains unknown. The ground state of  $^{154}\text{Hf}$  nuclei was populated via the  $\alpha$  decay of the ground and isomeric states of  $^{158}\text{W}$ . The  $^{158}\text{W}$  nuclei were produced at the Jyväskylä Accelerator Laboratory in fusion–evaporation reactions by bombarding a  $^{106}\text{Cd}$  target with a  $^{58}\text{Ni}$  ion beam. The  $^{158}\text{W}$  nuclei were separated in flight using the recoil separator MARA and implanted into a double-sided silicon strip detector (DSSD) at its focal plane. The DSSD was surrounded by an array of germanium detectors, which were used to measure  $\gamma$  rays in coincidence with  $\beta$  particles emitted in the decay of  $^{154}\text{Hf}$ . These measurements enabled the determination of a more precise half-life of 680(40)ms and a preliminary level scheme for  $^{154}\text{Hf}$  to be constructed. The latest results from the analysis will be presented along with prospects for future studies.