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Decay spectroscopy of ^{257,258}Db in the vicinity of the N=152 deformed shell gap[1] MARIJA VOSTINAR, The University of Tennessee, GANIL-E656 COLLABORATION, GSI-R292 COLLABORATION — Valuable information on the existence and the position of the island of superheavy stability can be obtained by studying the structure of elements in the transfermium region (Z¿100). Of particular interest are the isotopes around the deformed shell gaps of N=152 and N=162, where some of the single particle states relevant for the opening of these gaps are also relevant for the spherical shell closure in the superheavy region at N= 172 or N=184. In our study we have investigated ^{257}Db (N=152) and ^{258}Db. We confirmed that ^{257}Db has at least two states with different half-lives decaying by α particle emission into different states of ^{253}Lr, which further decays by α emission with different half-lives. Indication of two states with different half-lives for α decay in ^{258}Db was confirmed. Additional information on the γ-ray decay of excited levels in ^{250}Md was gathered and a tentative level scheme was proposed. The electron capture branch of ^{258}Db was measured directly, and the α decay of ^{258}Rf was confirmed. Yet, the branching ratio is significantly lower compared to the previously published value.

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