

## Coulomb Excitation of Neutron-rich Cd Isotopes at REX-ISOLDE \*

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Recent experiments in the surrounding of the doubly magic  $^{132}\text{Sn}$  have shown that for very neutron-rich nuclei far off the valley of stability the  $B(E2; 0_{\text{gs}}^+ \rightarrow 2_1^+)$  values are lower than expected from systematics [1]. In our first campaign at the REX-ISOLDE facility at CERN we extended such studies to neutron-rich Cd isotopes. We employed  $\gamma$ -spectroscopy following “safe” Coulomb excitation of radioactive beams at an energy of 2.86 MeV/u impinging on a Pd target. Here, we benefited from the recent energy upgrade of the REX postaccelerator. The  $\gamma$ -rays deexciting the first  $2^+$  state were detected by the highly efficient MINIBALL spectrometer consisting of 8 triple clusters of six-fold segmented HPGe detectors. The reaction kinematics was determined by detecting the scattered particles in a double-sided segmented Si detector (DSSSD). From our data, we have determined the  $B(E2; 0_{\text{gs}}^+ \rightarrow 2_1^+)$  values in the neutron-rich isotopes  $^{122,124}\text{Cd}$ . The precision of the  $B(E2)$  value for  $^{122}\text{Cd}$  has been improved considerably compared to a previous measurement [2]. For the heavier isotope  $^{124}\text{Cd}$ , a  $B(E2)$  value has been determined for the first time. In a test run for a couple of hours the feasibility of measuring also  $^{126}\text{Cd}$  has been demonstrated. Our preliminary results for both isotopes  $^{122,124}\text{Cd}$  are consistent with expectations for vibrational nuclei. We will present the status of our analysis and discuss the perspectives for future experiments.

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[1] D. C. Radford et al., Phys. Rev. Lett. 88, 222501 (2002); proceedings of conference ENAM’04.

[2] N. V. Zamfir et al., Phys. Rev. C 51, 98 (1995).