SUPERDEFORMED BAND IN ^{61}ZN

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To continue our investigation of superdeformation in the newly discovered mass 60 region, we carried out an experiment to search for superdeformed (SD) bands in Zn isotopes and its neighboring nuclei by using the ^{40}Ca + ^{29}Si reaction at a beam energy of 130 MeV. The experiment was performed at the LBL 88" cyclotron using the Gammasphere in conjunction with the Microball. Among the many bands discovered in this region, a superdeformed rotational band was established in ^{61}Zn via the 2α channel. Figure 1 shows the spectrum obtained by summing all possible combinations of double gates on transitions in this band. The intensity of this band is too weak for any measurement of lifetimes. However, the $\mathcal{J}^{(2)}$ moments of inertia of this band clearly indicate that its deformation is similar to the known[6] SD band in ^{62}Zn, which has a measured quadrupole deformation of $\beta_2 = 0.45$.

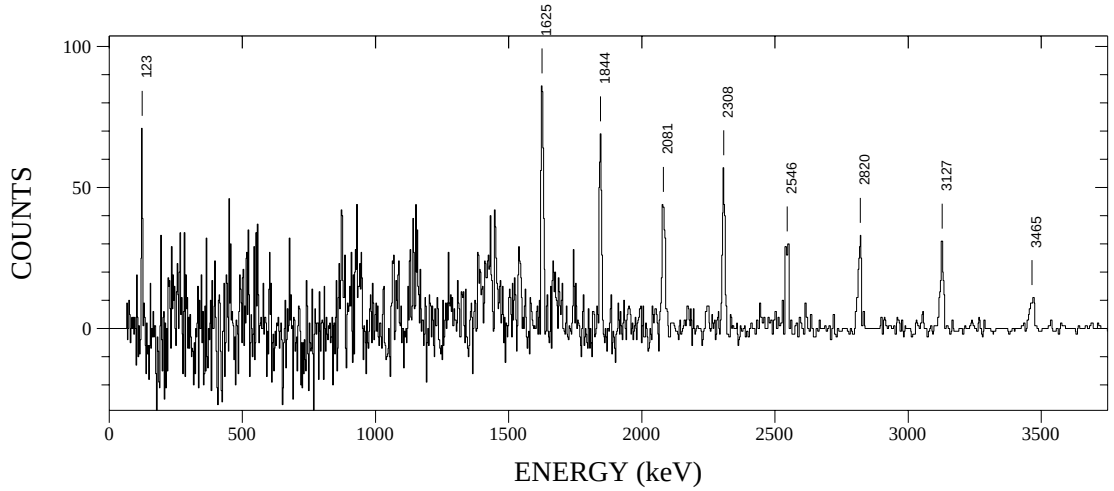

Figure 1: Spectrum showing the superdeformed band in ^{61}Zn, obtained by summing all possible double gates in this band.

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