

# Electron Momentum Density in Europium Using a $^{137}\text{Cs}$ Compton Spectrometer

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The isotropic Compton profile of europium, the most reactive lanthanide, has been measured at a resolution of 0.40 a.u. using 661.65 keV gamma-rays. In the absence of a band structure-based Compton profile, the experimental data are compared with renormalised-free-atom (RFA) and free electron models. It is seen that the RFA model with  $e^-e^-$  correlation agrees better with the experiment than the free electron models. The first derivatives of the Compton profiles show the hybridization effects of s-, p-, d-, f-electrons. From our RFA data we have also computed the cohesive energy of europium. PACS: 13.60.F, 71.15.Nc, 78.70. -g, 78.70.Ck

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