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The 4f multipole ordering effect on core-level spectroscopies of Ce intermetallics NORIMASA SASABE, HIRONORI TONAI, TAKAYUKI UOZUMI, Osaka Prefecture University — The $3d$ transition metal compounds and $4f$ rare earth compounds show attractive phenomena, such as superconductivity and Kondo effect, due to strong electron correlations among localized $3d$ and $4f$ electrons. Especially, multipole ordering of orbital and/or spin in $4f$ and $5f$compounds are attracting much attention these years. For example, CeB_6 is known to show antiferro-quadrupolar (AFQ) ordering below 3.2K. X-ray core-level spectroscopy is an efficient technique to investigate the electronic states of strongly correlated systems. Recent years, experimental techniques have been rapidly developing and, especially, the progress in experimental resolution has enabled us to observe fine spectral features, which were not formerly observed. These advantages will enable us to observe spectral fine features related with the multipole ordering. In this study, we discuss multipole ordering effects on X-ray spectra for CeB_6, especially paying attention on the polarization dependence. In order to simulate the electronic state of CeB_6 with the multipole ordering, we use an impurity Anderson model including realistic valence structure and a simplified RKKY interaction.

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