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Effect of QRPA correlations on nuclear matrix element of neutrinoless double-beta decay through overlap of QRPA states JUN TERASAKI, University of Tsukuba — We calculate the nuclear matrix element of the neutrinoless double-beta decay for ^{150}Nd $\rightarrow$ ^{150}Sm using quasiparticle random-phase approximation (QRPA) with Skyrme and volume pairing energy density functionals. We calculate the overlap of the QRPA states obtained on the basis of the ground states of the parent and the daughter nuclei using the definition of QRPA ground state as the vacuum to QRPA quasi bosons. More QRPA correlations are included in the nuclear matrix element by this method than usual QRPA approaches. These QRPA correlations have a significant effect to lower the nuclear matrix element through the overlap. This reseach is supported by Grants-in-Aid for Scientific Research (C), 26400265, and HPCI Strategic Program Field 5. The computations were performed using the K computer, AICS, RIKEN (hp120192 and hp120287); Mira, ALCF; T2K-Tsukuba and Coma, CCS, University of Tsukuba; CX400, Information Technology Center, Nagoya University (hp120287); and SR16000, YITP, Kyoto University.

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