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High-spin states of ^{70}Ge and a role of $g_{9/2}$ orbit MASAHIKO SUGAWARA, YOSUKE TOH, MASUMI OSHIMA, MITSUO KOIZUMI, ATSUSHI KIMURA, AKIHIKO OSA, Chiba Institute of Technology, Narashino, Chiba, Japan, YUICHI HATSUKAWA, Japan Atomic Energy Agency, Tokai, Ibaragi, Japan, HIDESHIGE KUSAKARI, Chiba University, Chiba, Japan, JUN GOTO, Niigata University, Niigata, Japan, MICHIO HONMA, University of Aizu, Aizu-Wakamatsu, Fukushima, Japan, MUNETAKE HASEGAWA, Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou, China, KAZUNARI KANEKO, Kyushu Sangyo University, Fukuoka, Japan — High-spin states of ^{70}Ge have been studied via the $^{60}\text{Ni}(^{12}\text{C}, 2p\gamma)^{70}\text{Ge}$ reaction at 45 MeV. The ground-state band and the second 0^+ band have been extended to the 12^+ and 8^+ states, respectively. Two negative-parity bands, one of which has a coupled structure and the other has a decoupled structure, have been observed. Although the decoupled one was known previously up to the (21^-) state, the order of $E2$ transitions up to the 15^- state have been largely modified by this experiment. The particle alignment observed in the ground-state band has been compared with those for the neighboring even Ge isotopes. The experimental level scheme has been compared with the shell model calculations in the model space $(2p_{3/2}, 1f_{5/2}, 2p_{1/2}, 1g_{9/2})$ employing the two kinds of effective interactions, one of which is an extended $P+QQ$ and the other is developed from a renormalized G-matrix.

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