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$^{10}\text{Be}+\alpha$ correlation in ^{14}C TADAHIRO SUHARA, Department of Physics, Kyoto University, YOSHIKO KANADA-EN'YO, Yukawa Institute for Theoretical Physics, Kyoto University — We will report structure of excited states in ^{14}C while paying attention to $^{10}\text{Be}+\alpha$ correlation. In the stable carbon nucleus, ^{12}C , it is already known that various 3 α cluster structures appear in the excited states. It is natural to expect that rich phenomena may appear also in ^{14}C which is an unstable neutron-rich nucleus. Many experiments indicate that there are various clustering structures in excited states of ^{14}C . In these structures, a $^{10}\text{Be}+\alpha$ structure attracts much interest in association with a linear-chain structure of 3 α that has been studied for many years. For the systematic study of ^{14}C , we adopted AMD(Antisymmetrized Molecular Dynamics) which has proved to be a powerful approach to describe various structures. The configurations were superposed in the GCM framework using (β, γ) as the generator coordinates. As the results, we obtained various states which have characteristic structures such as a triaxial structure, an equilateral-triangular structure and a linear-chain structure. We examined the possibility of the existence of $^{10}\text{Be}+\alpha$ correlation in these states. In linear-chain states, it was suggested that strong $^{10}\text{Be}+\alpha$ correlation exists, and this correlation plays an important role to stabilize the linear-chain structure.

Tadahiro Suhara
Department of Physics, Kyoto University

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