Search for Alpha particle Condensation in ^{16}O TOSHIYA TAKA-
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cently, Tohsaki *et al* were proposed the α particles condensed state existed in the
vicinity of the threshold energy that decay into 3- and 4-α particles in the ^{12}C and
^{16}O nuclei.The energy state of the 4-α particles condensation has not been specified
yet in ^{16}O though it is considered that the second 0^+ state (7.65MeV) in ^{12}C is the
3-α particles condensed one theoretically. To verify the existence of the α conden-
sation in ^{16}O, we have performed the experiment on the ^{12}C(^{16}O,^{16}O*[X+α]) ^{12}C
reaction. The probability of the 4-α particles condensed state of ^{16}O decays to 3-α
condensed one of ^{12}C and an α particle is large.Therefore,we investigate the excited
state in ^{16}O by obtaining the branching ratio of each decay channel of ^{16}O*$\rightarrow$^{12}C
$(0_2^+) + \alpha$,^{16}O*$\rightarrow$^{12}C $(2_1^+) + \alpha$,^{16}O*$\rightarrow$^{12}C (g.s) +α.In this talk, We will report on
result of the experiment and the MonteCalro simulation in ^{16}O for excited state of
15.1MeV which was one of candidates for the 4-α condensation.

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