

Abstract Submitted
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Measurement of E1 and E2 cross sections of the $^{12}\text{C}(\alpha,\gamma)^{16}\text{O}$ reaction at $E_{eff}=1.4$ MeV
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TOSHIRO OHSAKI, Tokyo Institute of Technology — The gamma-ray angular
distribution from $^{12}\text{C}(\alpha,\gamma)^{16}\text{O}$ to the ground state of ^{16}O was measured
using a pulsed alpha beam at $E_{eff}=1.6$ and 1.4 MeV. True gamma-ray events of
 $^{12}\text{C}(\alpha,\gamma)^{16}\text{O}$ were obtained by discriminating backgrounds due to neutrons
from $^{13}\text{C}(\alpha,n)^{16}\text{O}$ with a time-of-flight method. A Rutherford backscattering
spectrum of alpha particles from enriched ^{12}C targets was measured during beam
irradiation. The astrophysical S factors for E1 and E2 derived from the present cross
sections are discussed in comparison with the values derived by the recent R-matrix
calculation.

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