

MICROSCOPIC MODEL OF RADIATIVE CAPTURE  
REACTIONS WITH CLUSTER POLARIZABILITY.  
APPLICATION TO  ${}^7\text{Be}$  AND  ${}^7\text{Li}$

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S u m m a r y

We apply the microscopic three-cluster model developed by the authors to study effects of cluster polarization on the capture reactions  ${}^3\text{He}(\alpha, \gamma){}^7\text{Be}$ ,  ${}^3\text{H}(\alpha, \gamma){}^7\text{Li}$ ,  ${}^6\text{Li}(p, \gamma){}^7\text{Be}$  and  ${}^6\text{Li}(n, \gamma){}^7\text{Li}$ . These reactions are of great importance for the astrophysical applications. Thus main attention is paid to the cross section (or the astrophysical  $S$  factor) of the reactions at low energies. We also study thoroughly the correlations between the astrophysical  $S$  factor of the reactions at zero energy and various quantities associated with the ground state of a compound nucleus.