

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Formation and Dissolution of the $\alpha+^{16}\text{O}$ Cluster Core and their relation to the Motion of the Valance Neutrons in Ne Isotopes MASAAKI KIMURA — Focusing on the α clustering, the level structure of Ne isotopes will be discussed. The theoretical framework of the antisymmetrized molecular dynamics (AMD) plus generator coordinate method with the Gogny D1S interaction. The formation and dissolution of $\alpha+^{16}\text{O}$ cluster core which strongly depend on the motion of the valance neutrons are discussed. The presence of the molecular-orbital bands in ^{21}Ne and ^{22}Ne which have an $\alpha+^{16}\text{O}$ cluster core surrounded by valance neutrons occupying the molecular-orbitals are presented. The $\alpha+^{18}\text{O}$ molecular bands of ^{22}Ne is also discussed. The presence of the molecule-like structure which has an $\alpha+^{16}\text{O}$ cluster core plus valance neutrons are suggested throughout the Ne isotopes and their properties and dependence on the neutron number will be discussed.

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Date submitted: 26 May 2005

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