Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Probing the cluster structure in ^{10}Be using resonant ^{6}He + α scattering SRITEJA UPADHYAYULA, GRIGORY ROGACHEV, ETHAN UBERSEDER, EVGENIY KOSHCHIY, JOSHUA HOOKER, HESHANI JAYATISSA, CURTIS HUNT, BRIAN ROEDER, Texas AM University — There is strong evidence that some states in ^{10}Be exhibit molecular like α:2n:α configuration. Based on theoretical studies it appears that the 6.179 MeV 0^+ state in ^{10}Be has a pronounced α:2n:α configuration with an α-α inter-distance of 3.55 fm [Itagaki and Okabe, (2000)]. This is 1.8 times more than the corresponding value for the ^{10}Be ground state. The 2^+ at 7.542 MeV in ^{10}Be is believed to be the next member of this rotational band. The state at 10.2 MeV was identified as a 4^+ member in recent experiments. The algebraic model predicts that the terminating member of this band is the 6^+ state that should be found around 13 MeV. We performed an experiment to search for the 6^+ state in ^{10}Be at around 13 MeV excitation energy in the excitation function for ^{6}He+α scattering. The results of this study will be presented.

Sriteja Upadhyayula
Texas A
M University

Date submitted: 01 Jul 2016 Electronic form version 1.4