The search for nuclear molecules in isobaric analog states of $^{10}$B

ANTHONY KUCHERA, GRIGORY ROGACHEV, Florida State University, VLADILEN GOLDBERG, Texas A&M University, ERIC JOHNSON, LANIECE MILLER, Florida State University, SILVIO CHERUBINI, MARISA GULINO, Istituto Nazionale Fisica Nucleare Laboratori Nazionali del Sud, JOHN HARDY, Texas A&M University, MARCO LA COGNATA, MARCELLO LATTUADA, ROSARIO GIANLUCA PIZZONE, STEFANO ROMANO, CLAUDIO SPITALERI, Istituto Nazionale Fisica Nucleare Laboratori Nazionali del Sud, ROBERT TRIBBLE, Texas A&M University, WLADEK TRZASKA, University of Jyväskyla, AURORA TUMINO, Istituto Nazionale Fisica Nucleare Laboratori Nazionali del Sud — The highly deformed rotational band in $^{10}$Be with molecular like $\alpha:2n:\alpha$ structure was suggested by [1]. In the work presented here, a search for similar structures in $^{10}$B was performed. The excitation energy range of 8.5 -12.1 MeV was probed using the $^9$Be(p,$\alpha$)$^6$Li(T=1, 3.56 MeV, 0$^+$) reaction. An R-matrix analysis was performed which allowed spin-parities and partial widths of the observed states to be determined. The cluster properties of the observed states are discussed.


$^1$This work was supported by the National Science Foundation, grant NSF PHY-456463.