

Abstract Submitted  
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***s*-wave scattering lengths for  ${}^7\text{Be}+p$  system from *R*-matrix analysis**<sup>1</sup> SOM PANERU, CARL BRUNE, REKAM GIRI, Ohio Univ, RONALD LIVESAY, UWE GREIFE, Colorado School of Mines, JEFFERY BLACKMON, Louisiana State Univ, DAN BARDAYAN, University of Notre Dame, KELLY CHIPPS, ORNL, CHRIS RUIZ, BARRY DAVIDS, DEVIN CONNOLLY, TRIUMF — The astrophysical S factor near zero energy for the  ${}^7\text{Be}+p$  radiative capture reaction depends on the *s*-wave scattering lengths. The *s*-wave scattering lengths can be determined via *R*-matrix analysis of the scattering data. We report the measurement of elastic and inelastic scattering cross section for the  ${}^7\text{Be}+p$  system in the center-of-mass energy range of 0.474-2.740 MeV. The radioactive  ${}^7\text{Be}$  beam produced at Oak Ridge National Laboratory’s Holifield Radioactive Ion Beam Facility was accelerated and bombarded a 100- $\mu\text{g}/\text{cm}^2$  polypropylene target. The scattered particles were detected in a segmented silicon setector array. The *R*-matrix code AZURE2 has been used for the simultaneous fitting of the elastic and inelastic scattering data from this measurement and other available data. The *s*-wave scattering lengths were determined using the best fit *R*-matrix parameters and will be presented. The preliminary results from the *R*-matrix analysis of the data will be presented and the level structure of  ${}^8\text{B}$  will be discussed. The prospects for a new measurement of  ${}^7\text{Be}+p$  elastic scattering at the DRAGON facility of TRIUMF using gas target will also be discussed.

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