



Contribution ID: 53

Type: Poster

The first-excited 2+ state in ^{14}C

$B(E2: 2+ \rightarrow 0+)$ values of neutron-rich even-even carbon isotopes have been reported up to ^{20}C and do not only provide important information on the evolution of the underlying structural mechanism towards the drip line but also provide critical constraints for theoretical models. The $B(E2: 2+ \rightarrow 0+)$ value in ^{14}C can be indispensable to advance our understanding of the Carbon isotopic chain. However, the experimentally determined $B(E2: 2+ \rightarrow 0+)$ value for ^{14}C exhibits persistent inconsistencies with that obtained from theoretical models, including the no-core shell model. The safe Coulomb excitation experiment of ^{14}C at Florida State University took advantage of the unique beam capabilities and the availability of high-efficiency large volume LaBr3 detectors and the S3 double sided silicon strip detector. The preliminary results from the experiment to attempt the Coulomb excitation of ^{14}C will be presented.

This work was supported by the National Research Foundation of South Africa under grant number 105205 and by the U.S. DOE by LLNL under Contract DE-AC52-07NA27344.

Primary author: BRITS, Christiaan (iThemba LABS)

Co-authors: WIEDEKING, mathis (itl); Dr HADYNSKA-KLEK, K. (University of Surrey, UK); Dr TRIPATHI, V. (Department of Physics, Florida State University, USA); Mrs ABROMEIT, B. (Department of Physics, Florida State University, USA); Mrs ANASTASIOU, M. (Department of Physics, Florida State University, USA); Mr ASHER, B. (Department of Physics, Florida State University, USA); Dr BABY, L. T. (Department of Physics, Florida State University, USA); Mr BARON, J. S. (Department of Physics, Florida State University, USA); Dr BLEUEL, D. L. (Lawrence Berkely National Laboratory, USA); Prof. GÖRGEN, A. (Department of Physics, University of Oslo, Norway); Mr HENSLEY, T. C. (Department of Physics, Florida State University, USA); Mrs LUBNA, R. S. (Department of Physics, Florida State University, USA); Prof. MACCHIAVELLI, A. O. (Lawrence Berkely National Laboratory, USA); Dr MARSH, J. (U.S. Army research laboratory, USA); Dr NAPIORKOWSKI, P. (University of Warsaw, Poland); Prof. ORCE, J. N. (Department of Physics, University of the Western Cape, South Africa); Prof. PAPKA, P. (Department of Physics, Stellenbosch University, South Africa); Mr PARKER, J. P. (Department of Physics, Florida State University, USA); Mr PERELLO, J. (Department of Physics, Florida State University, USA); Mr RIJAL, N. (Department of Physics, Florida State University, USA); Mrs RUBINO, E. (Department of Physics, Florida State University, USA); Prof. SIEM, S. (Department of Physics, University of Oslo, Norway); Prof. TABOR, S. L. (Department of Physics, Florida State University, USA); Dr TVETEN, G. (Department of Physics, University of Oslo, Norway); Mrs VILLAFANA, K. (Department of Physics, Florida State University, USA)

Presenter: BRITS, Christiaan (iThemba LABS)

Track Classification: Track B