Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Structure of exotic isotope ^{9}C via resonance elastic scattering. GRIGORY ROGACHEV, Department of Physics, Florida State University, Tallahassee, FL 32306, JAMES KOLATA, LARRY LAMM, Department of Physics, University of Notre Dame, IN 46556, FREDERICK BECCHETTI, YOU CHEN, DONALD ROBERTS, Department of Physics, University of Michigan, Ann Arbor, MI 48109, PAUL DEYOUNG, Department of Physics and Engineering, Hope College, Holland, MI 49422, JERRY HINNEFELD, Department of Physics, Indiana University-So. Bend, South Bend, IN 46634 — Light exotic nuclei provide important insights into the understanding of nuclear forces at large neutron to proton ratios. The progress in development of modern theoretical approaches such as quantum Monte-Carlo calculations (QMC) and no-core shell model (NCSM) allows for predictions of properties of light nuclei (A$\leq$12) from the basic principles. Unfortunately, experimental information on the structure of many light exotic isotopes is very incomplete making it difficult to judge the accuracy of the *ab initio* models in case of large excess of neutrons or protons. The focus of this experimental study is the structure of neutron-deficient carbon isotope ^{9}C. Only one excited state was known in this nucleus. Excited states in ^{9}C were populated in resonance elastic scattering of protons on ^{8}B using method of inverse kinematics and very thick target. The analysis was made using combined R-matrix - Continuum Shell Model approach. The structure of ^{9}C will be discussed and comparison with the predictions of modern theoretical models will be made.

Grigory Rogachev
Department of Physics, Florida State University, Tallahassee, FL 32306

Date submitted: 25 May 2005 Electronic form version 1.4