## Abstract Submitted for the DNP07 Meeting of The American Physical Society

Direct Measurement of the  ${}^{1}S_{0}$  Neutron-Neutron Scattering Length at the YAGUAR Reactor<sup>1</sup> S.L. STEPHENSON, B.E. CRAWFORD, D. KAWAMURA, M.R. SCHMIDT, D.A. YAGER-ELORRIAGA, Gettysburg College, C.R. HOWELL, W. TORNOW, Duke University, G.E. MITCHELL, North Carolina State University, W.I. FURMAN, A.R. KRYLOV, E.V. LYCHAGIN, A. YU. MUZICHKA, G.V. NEKHAEV, E.I. SHARAPOV, V.N. SHVETSOV, A.V. STRELKOV, Joint Institute for Nuclear Research, Russia, B.G. LEVAKOV, A.E. LYZHIN, YU. I. CHERNUKHIN, YA. Z. KANDIEV, All-Russian Research Institute of Technical Physics, Russia, DIANNA COLLABORATION — A direct measurement of the  ${}^{1}S_{0}$  neutron-neutron (*nn*) scattering length (*a<sub>nn</sub>*) provides a unique contribution to understanding charge symmetry breaking in the nuclear force. The current status of the experiment at the pulsed aperiodic YAGUAR reactor facility, with a neutron density flux of over  $10^{18}$  cm<sup>-2</sup> s<sup>-1</sup>, will be presented.

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