

Abstract Submitted
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DIANNA: Modeling the time dependence of the YAGUAR reactor pulse¹ D. KAWAMURA, M.R. SCHMIDT, D.A. YAGER-ELORRIAGA, B.E. CRAWFORD, S.L. STEPHENSON, Gettysburg College — A direct measurement of the neutron-neutron scattering length, a_{nn} , can be found from thermal-thermal neutron collisions within the through channel in the aperiodic pulsed YAGUAR reactor. We model the reactor using MCNPX and the visualization code IViPP. Our geometries now include the 12m time-of-flight path, with its complex collimation system. In addition, we analyzed the time dynamics of the neutron field on the moderator wall. This knowledge of the pulse along with the collision modeling is necessary to extract a_{nn} from the detector count rate.

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