Abstract Submitted
for the APR14 Meeting of
The American Physical Society

Dwarf Galaxy Constraints on Self-Interacting Dark Matter BENJAMIN WOODALL, CASEY WATSON, Millikin University — We examine the transition from the primordial, cuspy NFW halos of dwarf galaxies found in simulations to the observed density profiles of today's Milky Way dwarf galaxies in the context of self-interacting dark matter (SIDM) models. Based on the requirement that the elastic scattering of the SIDM removes the cusp mass of each dwarf galaxy, we find $\sigma/m < 0.06$ cm^2/g, even in the least restrictive case (Leo II). These constraints rule out the range of values favored to remove the cusps of larger galaxies in recent simulations: 0.1 cm^2/g $< \sigma/m < 1$ cm^2/g.

Benjamin Woodall
Millikin University

Date submitted: 06 Feb 2014 Electronic form version 1.4