Abstract Submitted for the MAR15 Meeting of The American Physical Society

Ferromagnetic Josephson Junctions for Cryogenic Memory¹ BETHANY M. NIEDZIELSKI, Michigan State University, ERIC C. GINGRICH, Michigan State University and Northrop Grumman Corporation, MAZIN A. KHA-SAWNEH, REZA LOLOEE, WILLIAM P. PRATT JR., NORMAN O. BIRGE, Michigan State University — Josephson junctions containing ferromagnetic materials are of interest for both scientific and technological purposes. In principle, either the amplitude of the critical current or superconducting phase shift across the junction can be controlled by the relative magnetization directions of the ferromagnetic layers in the junction. Our approach concentrates on phase control utilizing two junctions in a SQUID geometry. We will report on efforts to control the phase of junctions carrying either spin-singlet or spin-triplet supercurrent for cryogenic memory applications.

¹Supported by Northorp Grumman Corporation and by IARPA under SPAWAR contract N66001-12-C-2017.

Bethany M. Niedzielski Michigan State University

Date submitted: 14 Nov 2014

Electronic form version 1.4