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Fabrication and characterization of single domain magnetic Josephson MAZIN KHASAWNEH, BETHANY NIEDZIELSKI, ERICH GINGRICH[1], REZA LOLOEE, WILLIAM PRATT, JR, NORMAN BIRGE, Michigan State Univ — A nice effect that can be observed in Ferromagnetic (F) Josephson junctions is the crossover from a standard Josephson junction (0-junction) to a "π-junction" as a function of the thickness of the F layer, d_F. This observation is interesting not only from the scientific point of view but also from a practical point of view, as it could be used in cryogenic memory, for example. In this work we are fabricating and measuring micron-scale Josephson junctions containing a soft magnetic material such as NiFe. Such junctions exhibit clear switching of the single-domain magnetic element as a function of applied field. We will report on our recent progress.

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