Direct measurements of the current-phase relation in long-range spin-triplet SFS Josephson junctions

DAVID HAMILTON, DALE VAN HARLINGEN, Univ of Illinois - Urbana, YIXING WANG, NORMAN BIRGE, Michigan State University — We present direct measurements of the current-phase relation (CPR) of Josephson junctions which use multiple ferromagnetic layers to generate long-range spin-triplet pair correlations. Using a phase-sensitive Josephson interferometry technique, we obtain the phase and temperature dependence of this spin-triplet supercurrent. We also demonstrate the use of an inductive shunt to enhance this technique at higher critical currents. Our data suggest that the current-phase relation of these junctions is harmonic in character. Further measurements are planned in order to determine the ground state phase shift of these junctions.