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Josephson currents through topological insulator surfaces JENS H. BARDARSON, RONI ILAN, UC Berkeley, HEUNG-SUN SIM, KAIST, JOEL E. MOORE, UC Berkeley — Motivated by recent experiments carried out on superconductor – 3D topological insulator – superconductor junctions, we study the transport properties of these junctions. Transport is believed to be dominated by the surface states of the topological insulator, and we discuss the effects of the junctions geometry on the Josephson supercurrent in the presence of a magnetic field.

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