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Amperean pairing mediated by magnetic fluctuations at the surface of a topological insulator MEHDI KARGARIAN, DMITRY K. EFIMKIN, VICTOR GALITSKI, Department of Physics, University of Maryland, College Park, Maryland 20742 — We study the interface between a three-dimensional topological insulator and a ferromagnetic thin film. Due to the Dirac nature of surface states, in-plane magnetization couples to them as a gauge field, leading to emergent electric and magnetic fields. We argue that magnetic fluctuations mediate strongly anisotropic interaction and can be the origin of an unconventional superconductivity with Amperean pairings.

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