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Creating Spin Switches and Junctions on Surfaces ERIC MILLS, PHILIP STAMP, University of British Columbia — Inspired by the work of Hirjibehedin *et al*, (*Science* **317** 1199) creating Heisenberg spin chains on an insulating surface, we examine geometries in which excitations down a spin chain are either blocked or transmitted depending on the state of a central junction, made from a spin dimer. The dimer state can be controlled by excitations down an additional chain, creating a spin switch. In addition to the technological applications of such a switch, the theoretical language developed has application to certain quantum computation schemes.

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