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Josephson junctions between topological and conventional superconductors PAVEL IOSELEVICH, Max Planck Institute for Solid State Research, MIKHAIL FEIGELMAN, Landau Institute for Theoretical Physics — Topological superconductors host protected gapless modes at their boundaries. This leads to various robust phenomena when a topological superconductor is contacted to a topologically trivial lead, like the fractional (4π -periodic) Josephson effect or the zero-bias conductance peak in a tunneling NS-junction. Here we discuss phenomena arising in a Josephson contact between a topological and a trivial superconductor. The Josephson effect in this case has an asymmetric dependence on the order parameters involved, and the critical current is suppressed very strongly in a typical situation, so that the product $I_c R \ll e\Delta$ even in a short contact.

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