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Spin-precession-assisted tunneling in hybrid superconducting point contacts CECILIA HOLMQVIST, WOLFGANG BELZIG, University of Konstanz, MIKAEL FOGELSTROM, Chalmers University of Technology — The charge and spin transport properties of a quantum point contact coupled to a nanomagnet depends strongly on the dynamics of the nanomagnet's spin. We analyze the current-voltage characteristics of a junction coupled to a spin whose dynamics is modeled as Larmor precession brought about by an external magnetic field. The interaction between the spin dynamics and the Josephson effect leads to a rich subgap structure due to spin-precession-assisted multiple Andreev reflections. Additionally, the spin current displays Shapiro-like resonances due to the interplay between the ac Josephson current and the Larmor precession.

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