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**The 0.7-anomaly in quantum point contacts with spin-orbit coupling** OLGA GOULKO, University of Massachusetts Amherst, FLORIAN BAUER, JAN HEYDER, JAN VON DELFT, Ludwig-Maximilians Universitaet Munich — In addition to plateaus at integer values of  $G_0 = 2e^2/h$ , the linear conductance of a quantum point contact shows an anomalous shoulder at around  $0.7G_0$ . We study how the shape of this 0.7-anomaly is influenced by spin-orbit effects. We discuss both non-interacting and interacting systems at zero temperature, the latter of which we study using a functional renormalization group approach. In the presence of an external magnetic field, spin-orbit effects can significantly influence the shape of the 0.7-anomaly by mimicking and enhancing the effect of Coulomb interactions via changing the relative heights of the peaks of the local densities of states in the two spin states. We provide a detailed microscopic explanation of this effect and propose a setup for an experimental realization.

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