

Monopole-fermion scattering in a chiral gauge theory

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The scattering of charged massless fermions on magnetic monopoles at low-energy in the s-wave presents a long-standing final state puzzle: it seems to be generally impossible to construct an outgoing state conserving all charges. Indeed, bosonizing the low-energy EFT, one is seemingly led to particles of fractional charge.

In this talk I describe this problem starting from a UV complete chiral gauge theory, and descending to the EFT. This step allows us to discuss and exclude some existing proposed solutions to the puzzle. I will argue that the correct solution is introducing a topological operator.

I will conclude by commenting on non-abelian charges and some open problems.

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