Dirac operators with magnetic links.

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Abstract

I will discuss realizations of Dirac operators with singular magnetic fields supported on a finite number of closed field lines, i.e., magnetic links. The operators depend periodically, with period 2π, on the magnetic fluxes along each field line. I will discuss a conjectured formula for the spectral flow of these families of operators and a proof of the conjecture for unknots and torus knots, e.g., the trefoil.

This is joint work with Fabian Portmann and Jeremy Sok.