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The Aharonov-Bohm effect and conic singularities for the Dirac equation

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The solution of the problem of fermions scattering in one Aharonov-Bohm vortex involves constructing a one-parameter family of self-adjoint extensions. The Green function can be constructed from the corresponding solutions. The following is a comparison of quantum-mechanical scattering problem with quantum field theory problem on the search for correlation functions of fermion states. Namely, Green's function can be interpreted as correlation function in the space of fermion states. Also there is considered a similar problem about scattering of fermions on a conical singularity, which implies a similar analysis of the results.

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