Investigation of magneto-tunnel conductance across the junctions of Weyl semimetals

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We investigate magneto-transport across an interface between two Weyl semi-metals(WSMs) whose Weyl nodes project onto different interface momenta. Such an interface hosts topological Fermi arcs that connect Weyl nodes of identical chirality in different Weyl semi-metals. We find that both the bulk chiral Landau level and the transverse surface modes contribute the tunnel conduction through the junction. Magnetic tunnelling between the two Fermi arc channels at the interface leads to a saturation in the magneto-conductance at higher magnetic field. We further see the effect of scattering events between the surface Fermi arcs and the bulk states showing up in the conductance of a system with finite size.