Abstract Submitted
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Fractional quantum Hall effect and plasmons in topological insulators[1] ASHLEY DASILVA, Pennsylvania State University — I will discuss theoretical studies of the effect of Coulomb interactions at the topological insulator surface in the presence of a magnetic field. Coulomb interaction can cause composite fermion formation and the fractional quantum Hall effect. We predict the stability of the fractional quantum Hall effect by considering the form of the effective interparticle interaction: if it is sufficiently short ranged, then there will be composite fermion formation. We will also study plasmons and magnetoplsmons of the surface states both for an ideal topological insulator and for a topological insulator with bulk conduction.

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