EDGE STATES IN THE QUANTUM HALL EFFECT AS GENERALIZED FERMI SURFACE SINGULARITIES

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The ground state of an interacting electron system confined in a potential $V(y)$ that is translationally invariant in the x-direction can be characterized by $n(k)$ the total occupation of Landau orbitals with momentum k. The conformal field theory picture of edge states developed by Wen implies that boundaries between quantum Hall states are associated with singularities in $n(k)$ at generalized Fermi vectors k_i. Distinct edges are defined even if their spatial separation is much less than a magnetic length. The nucleation and evolution of such edges as the interaction or the confining potential are varied in principle allows parent-daughter relations in the hierarchy picture of the FQHE states to be determined. Studies of $n(k)$ for Laughlin states of different widths will be described.