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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.