

Abstract Submitted
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Exactly Solvable Model for Impurity Scattering at the Edge of the $\nu = 2/3$ FQH State CHRIS HEINRICH, MICHAEL LEVIN, University of Chicago — We present an exactly solvable model for impurity scattering on the edge of a $\nu = 2/3$ FQH state that is valid in the strong scattering limit. For this model we obtain exact mode expansions for the charge density and current operators, as well as the exact low energy spectrum. Importantly, we find that the low energy theory of the model consists of decoupled and counterpropagating charge and neutral modes, agreeing with the earlier work of Kane, Fisher, and Polchinski. Unlike the previous derivation, which relied on perturbative renormalization group arguments, our approach allows us to derive the emergence of decoupled charge and neutral modes from a microscopic model which is initially far from the decoupled fixed point.

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