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How universal is the fractional quantum Hall edge physics? SHIVAKUMAR JOLAD, The Pennsylvania State University, DIPTIMAN SEN, Indian Institute of Science, JAINENDRA JAIN, The Pennsylvania State University — We report on study of edge excitations of fractional quantum Hall states at filling factors $\nu = 1/3$ and $\nu = 2/5$. By considering the restricted basis of composite fermion wave functions, which is very accurate for the low energy eigenstates, we are able to diagonalize systems with up to 54 particles which allows us to make extrapolations to the thermodynamic limit. In a model with neutralizing positive jellium background disk at a distance d, we find that edge reconstruction is generic, occurring even when the electron and the background disks coincide. We also test the postulated form for the electron field operator of the effective field theory approach for the fractional edge and find it to be inconsistent with our microscopic calculations. Implications of our results for the observed non-universality of the edge exponent will be discussed.

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