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Asymmetric zero-bias anomaly for strongly interacting electrons in one dimension

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I will report on recent theoretical results on a system of one-dimensional electrons in the regime of strong repulsive interactions, where the spin exchange energy J is much smaller than the Fermi energy, and the conventional Tomonaga-Luttinger theory does not apply. It is shown, by bosonizing only the charge sector, that the tunneling density of states has a form of an asymmetric peak centered near the Fermi level. This is a work done in collaboration with K.A. Matveev and L.I. Glazman: K.A. Matveev, A. Furusaki, and L.I. Glazman, Phys. Rev. Lett. 9