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Transverse Field Effect in Graphene Nanoribbons[1] KATHRYN TODD, HUNG-TAO CHOU, DAVID GOLDHABER-GORDON, Stanford University — We describe transport measurements on graphene nanoribbon devices with separately addressable side gates. Applying the same voltage to both side gates allows us to resolve the Dirac points in the nanoribbon and in the 2-dimensional graphene leads. In conjunction with the side gates, a back gate allows us to separately tune the nanoribbon and the leads between p-type and n-type. Source-drain measurements illustrate the importance of charging effects in these short nanoribbons. Applying opposing voltages to the two side gates allows us to test predictions about the effect of a transverse electric field in graphene nanoribbons.

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