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**Local transport measurement at mesoscopic lengthscales on epitaxial graphene using scanning tunneling potentiometry** WEIGANG WANG, KO MUNAKATA, Stanford University, MICHAEL ROZLER, Rush University, MALCOLM R. BEASLEY, Stanford University — We report direct measurement of the local transport potential at mesoscopic lengthscales in epitaxial graphene by scanning tunneling potentiometry. The measurements were made possible by using slender, sharp tips manufactured by focused ion beam that avoid the previous problem of tip jumping. The sample was measured at 17K, well below the onset of weak localization; hence locally the transport was mesoscopic. Besides local Landauer residual resistivity dipoles associated with topographical features of our sample, we observed peaks and dips in the local transport potential for which there is as yet no explanation. Work supported by AFOSR MURI Contract # FA9550-09-1-0583-P00006

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