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Scanning Tunneling Microscopy and Spectroscopy of Rotated Phases on C-Face Epitaxial Graphene JOANNA HASS, NIKHIL SHARMA, JORGE-ENRIQUE MILLAN-OTOYA, MICHAEL SPRINKLE, Georgia Institute of Technology, CLAIRE BERGER, Georgia Institute of Technology/ CNRS, France, WALTER DEHEER, EDWARD CONRAD, PHILLIP FIRST, Georgia Institute of Technology — Diffraction data have shown that multilayer graphene grown on the (000-1) polar face of SiC forms with a high density of rotational stacking faults [1]. We present STM evidence of these rotated phases along with rationale for the particular angles observed. Topographic images show flat, micron scale domains with surface modulation periods corresponding to moiré patterns generated by rotational stacking faults near the surface. The modulation periods are in agreement with surface x-ray diffraction and low energy electron diffraction data. STS data will be presented and the effects of the observed rotated domains on the electronic structure of C-face multilayer graphene films will be discussed. [1] J. Hass, F.Varchon, J. E. Millán-Otoya, M. Sprinkle, W.A. de Heer, C. Berger, P.N. First, L. Magaud, E.H. Conrad (*to be published*), http://arxiv.org/abs/0706.2134

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