

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Electrical Detection of Spin Transport in Epitaxial Graphene Grown on the Si-face of Hexagonal SiC(0001) J. ABEL, A. MATSUBAYASHI, J. GARRAMONE, University at Albany, C. DIMITRAKOPOULOS, A. GRILL, C.Y. SUNG, IBM T.J. Watson Research Center, V. LABELLA, University at Albany — Graphene has great potential for use as a spin transport channel due to its low spin orbit coupling and high mobility. Spin diffusion lengths in the microns have been demonstrated on exfoliated graphene at room temperature¹. We will present our measurements of spin relaxation in both exfoliated graphene and epitaxially grown graphene on SiC from IBM using non-local Hanle measurements as a function of temperature. The diffusion lengths on epitaxial graphene were comparable to those found in exfoliated flakes. The initial results show the diffusion length is limited by contact induced relaxation that occurs at the metal/graphene interface in agreement with results from exfoliated flakes.

¹Wei Han, et al. PRL 105, 167202 (2010).

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Date submitted: 19 Nov 2010

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