

Abstract Submitted  
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**Half integer quantum Hall effect in high mobility single layer epitaxial graphene** CLAIRE BERGER, GATECH & CNRS, XIAOSONG WU, YIKE WU, MING RUAN, NERASOA K. MADIOMANANA, JOHN HANKINSON, MIKE SPRINKLE, Georgia Tech, BENJAMIN PIOT, CLEMENT FAUGERAS, MAREK POTEMSKI, CNRS- LNCMI, France, WALT A. DE HEER, Georgia Tech — We present results on the quantum Hall effect for single layer epitaxial graphene grown on the C-face of 4H silicon carbide. Hall plateaus at half integer values and vanishing resistivity are observed for high mobility samples ( $\mu = 20,000\text{cm}^2/\text{V.s}$  at 4 K and  $15,000\text{cm}^2/\text{V.s}$  at 300 K) despite contamination and substrate steps. This is comparable to the best exfoliated graphene flakes on SiO<sub>2</sub> and an order of magnitude larger than Si-face epitaxial graphene monolayers. Splitting of the  $n=0$  Landau level ( $\nu = 1$ ) is observed at high field. These and other properties indicate that C-face epitaxial graphene is an ideal platform for graphene-based electronics.

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