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**Measurement of the 1/3 Fractional Quantum Hall Effect Energy Gap in Multi-terminal Suspended Graphene Devices** FERESHTE GHAHARI KERMANI, YUE ZHAO, PAUL CADDEN-ZIMANSKY, Columbia University, KIRILL BOLOTIN, Vanderbilt University, PHILIP KIM, Columbia University — In recent investigations of transport properties in two-terminal high mobility suspended graphene devices, a quantized conductance corresponding to the 1/3 FQHE state has been observed. However, due to the inherent mixing between longitudinal and transverse resistivities in this two-terminal measurement, quantitative characterization of the observed FQHE states such as the FQHE energy gap is difficult. In this talk, we present the measurement of multi-terminal IQHE and FQHE states in ultraclean suspended graphene samples in low density regime. The energy gap of the 1/3 FQHE, measured by its temperature-dependent activation, is found to be much larger than the corresponding state found in the 2DEGs of high-quality GaAs heterostructures, indicating that stronger e-e interactions are present in graphene.

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