Abstract Submitted
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Transverse Thermoelectric Conductivity of Bi-layer graphene in quantum Hall Regime[1] WEI-LI LEE, CHANG-RAN WANG, WEN-SEN LU, Institute of Physics, Academia Sinica, INSTITUTE OF PHYSICS, ACADEMIA SINICA TEAM — We performed electric and thermoelectric transport measurements of bilayer graphene in a magnetic field up to 15 Tesla. The transverse thermoelectric conductivity α_{xy}, determined from four transport coefficients, attains a peak value of $\alpha_{xy,peak}$ whenever chemical potential lies in the center of a Landau level. The temperature dependence of $\alpha_{xy,peak}$ is dictated by the disorder width W_L. For $k_BT/W_L \leq 0.2$, $\alpha_{xy,peak}$ is nominally linear in temperature, which gives $\alpha_{xy,peak}/T = 0.19 \pm 0.03 nA/K^2$ independent of the magnetic field, temperature and Landau Level index. At $k_BT/W_L \geq 0.5$, $\alpha_{xy,peak}$ saturates to a value close to the predicted universal value of $4 \times (\ln 2) k_B e/h$ according to the theory of Girvin and Jonson. We remark that an anomaly is found in α_{xy} near the charge neutral point, similar to that in single-layer graphene.

[1]Phys. Rev. B 82, 121406(R) (2010).

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