

Abstract Submitted
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Transport Properties of
Dual-Gated Bilayer Graphene/Hexagonal Boron Nitride Moiré Superlattices BIN CHENG, PENG WANG, CHENG PAN, TENGFEI MIAO, YONG WU, CHUN NING LAU, MARC BOCKRATH, Univ of California - Riverside — Moiré superlattices of monolayer and bilayer graphene and hexagonal boron nitride (hBN) show Hofstadter's butterfly physics under an applied magnetic field [1-3]. However, such bilayer graphene systems on boron nitride with both back and top gates have not been studied yet, where the properties of the fractal Hofstadter spectrum are potentially tunable by varying the perpendicular electric field applied to the bilayer system. Using layer stacking and edge contacts [4] we fabricate such devices. We will report our latest data from these encapsulated hBN/aligned bilayer-graphene/hBN devices.

[1] P. A. Ponomarenko et al., Nature 497, 594-597 (2013).

[2] C. R. Dean, et al., Nature 497, 598-602(2013).

[3] B. Hunt, et al., Science 340, 1427(2013).

[4] L. Wang. et al., Science 342, 6158(2014)

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