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Landau Level Crossings in Dual-Gated Bilayer Graphene at Large Displacement Fields CHENG PAN, YONG WU, BIN CHENG, SHI CHE, CHUN NING LAU, MARC BOCKRATH, University of California, Riverside — Previous work shows that Landau levels in bilayer graphene with the same orbital index N but different spin and valley degrees of freedom can form superpositions at a finite electric field[1-2]. Using the technique of one dimensional edge contacts[3] we fabricate dual-gated boron-nitride-encapsulated bilayer graphene device with a graphite local gate, which enables us to apply large electric fields and observe Landau level crossings between levels with neighboring orbital indices. We will discuss our latest results. [1] R. T. Weitz et al., Science 330, 812-816 (2010). [2] K. Lee et al., Science 345, 58-61 (2014). [3] L. Wang et al., Science 342, 614-617 (2013)

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