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Band structures of bilayer graphene superlattices SI WU, MATTHEW KILLI, ARUN PARAMEKANTI, University of Toronto — We have studied the electronic band structures of bilayer graphene (BLG) superlattices. In BLG, there are two distinct types of superlattice modulations - chemical potential modulations and electric field induced gap modulations. We have solved energy bands for one- and two-dimensional superlattices for both kinds of modulations. We found, in particular, for a 2D superlattice with gap modulation, that the energy gap is one order smaller than that in a uniform electric field. The problem of a single charged impurity in gated BLG is also studied. Implications of our results on transport experiments are discussed.

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