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Landau Orbit Mixing in Modulated Bilayer Graphene PAULA FEKETE, United States Military Academy, GIRIJA DUBEY, York College, CUNY, GODFREY GUMBS, ANDRII IUROV, Hunter College, CUNY, DAN-HONG HUANG, Air Force Research Laboratory, Kirtland Air Force Base — Recently, the Landau level (LL) spectrum of bilayer graphene has been the subject of much discussion since its formation depends on whether the stacking is AA or AB arising from positioning the atoms in the underlying sublattices. This difference in stacking may affect the transport and optical properties of the bilayer. So far, little attention has been given to the electron energy bands of bilayer graphene when a strong electrostatic modulation is applied in the presence of a uniform magnetic field perpendicular to the bilayer. Using a model Hamiltonian for AB stacking, we investigate the modiffication of the LLs by a two-dimensional periodic array of scatterers and the effect of modulated LLs on transport and optical properties of the bilayer.

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