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Edge states of zigzag bilayer graphite nanoribbons JUN-WON RHIM, KYUNGSUN MOON, Department of Physics, Yonsei University, Seoul, South Korea, CONDENSED MATTER THEORY GROUP TEAM — Electronic structures of the zigzag bilayer graphite nanoribbons(Z-BGNR) with various ribbon width N are studied within the tight binding approximation. Neglecting the small inter-layer hopping parameter γ_4 , there exist two fixed Fermi points $\pm k^*$ independent of the ribbon width with the peculiar energy dispersion near k^* as $\varepsilon(k) \sim \pm(k-k^*)^N$. By investigating the edge states of the Z-BGNR, we notice that the trigonal warping of the bilayer graphene sheets are reflected on in the edge state structure of the Z-BGNR. With the inclusion of γ_4 , the above two Fermi points are not fixed, but drift toward the vicinity of the Dirac point with the increase of the width N as shown by the finite scaling method and the peculiar dispersions change to the parabolic ones.

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