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Intra-valley Spin-triplet p+ip Superconducting Pairing in Lightly Doped Graphene[1] JIANHUI ZHOU, Carnegie Mellon University, TAO QIN, International School for Advanced Studies, Italy, JUNREN SHI, Peking University, China — We analyze various possible superconducting pairing states and their relative stabilities in lightly doped graphene. We show that, when inter-sublattice electron-electron attractive interaction dominates and Fermi level is close to Dirac points, the system will favor intra-valley spin-triplet $p + \mathrm{ip}$ pairing state. Based on the novel pairing state, we further propose a scheme for doing topological quantum computation in graphene by engineering local strain fields and external magnetic fields.

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