Defect engineering of graphene
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One of the most fascinating aspects of graphene is that its topological features of the electronic states can be fundamentally changed by modifying its local lattice structure. In this talk, I will show how to tune the electronic structures of graphene by defect engineering: (1) we observed superlattice Dirac points and space-dependent Fermi velocity in a corrugated graphene monolayer; (2) we reported angle dependent van Hove singularities (VHSs) of slightly twisted graphene bilayer; (3) we studied the evolution of local electronic properties of twisted graphene bilayer induced by a strain; The strain results in pseudo-Landau levels, which mimic the quantization of massive Dirac fermions in a magnetic field of about 100 T, and valley polarization along a strained graphene wrinkle.