

## Chasing the Magnetic Butterflies in Nanoscale Fields

Two-dimensional electrons simultaneously exposed to a perpendicular magnetic field and a two-dimensional periodic potential exhibit an intricate energy spectrum with the fractal pattern that resembles a butterfly. Over the years, there have been many attempts to observe this unique pattern but with limited success. A breakthrough has now been achieved finally in monolayer and bilayer graphene. The chapter, however, is not yet closed and there remains many questions that need to be answered.