

Rippling Graphene at the Nanoscale through Dislocation Addition.

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S1. Effect of residual aberrations and astigmatisms on HRTEM image of graphene

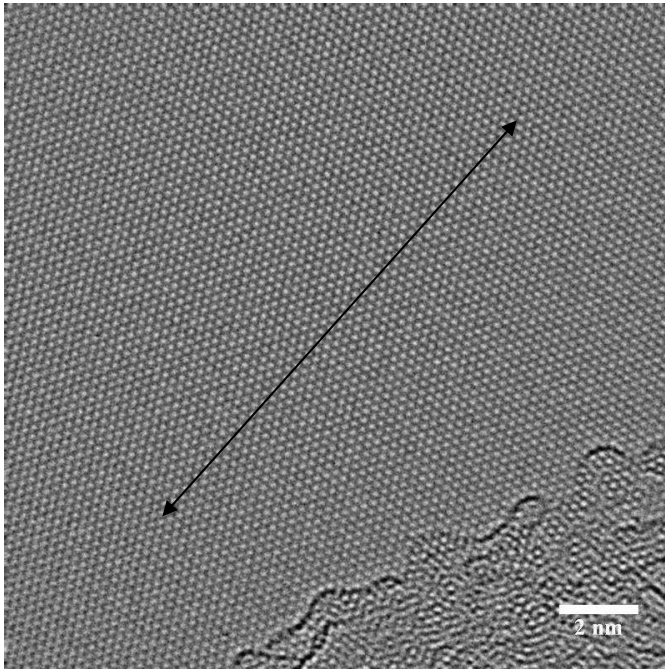


Figure S1. Long-range residual aberrations in HRTEM images of graphene. Arrow indicates direction where aberrations are strongest and cause changes in lattice contrast.

S2. Effect of tilt angle on HRTEM images and Geometric Phase Analysis

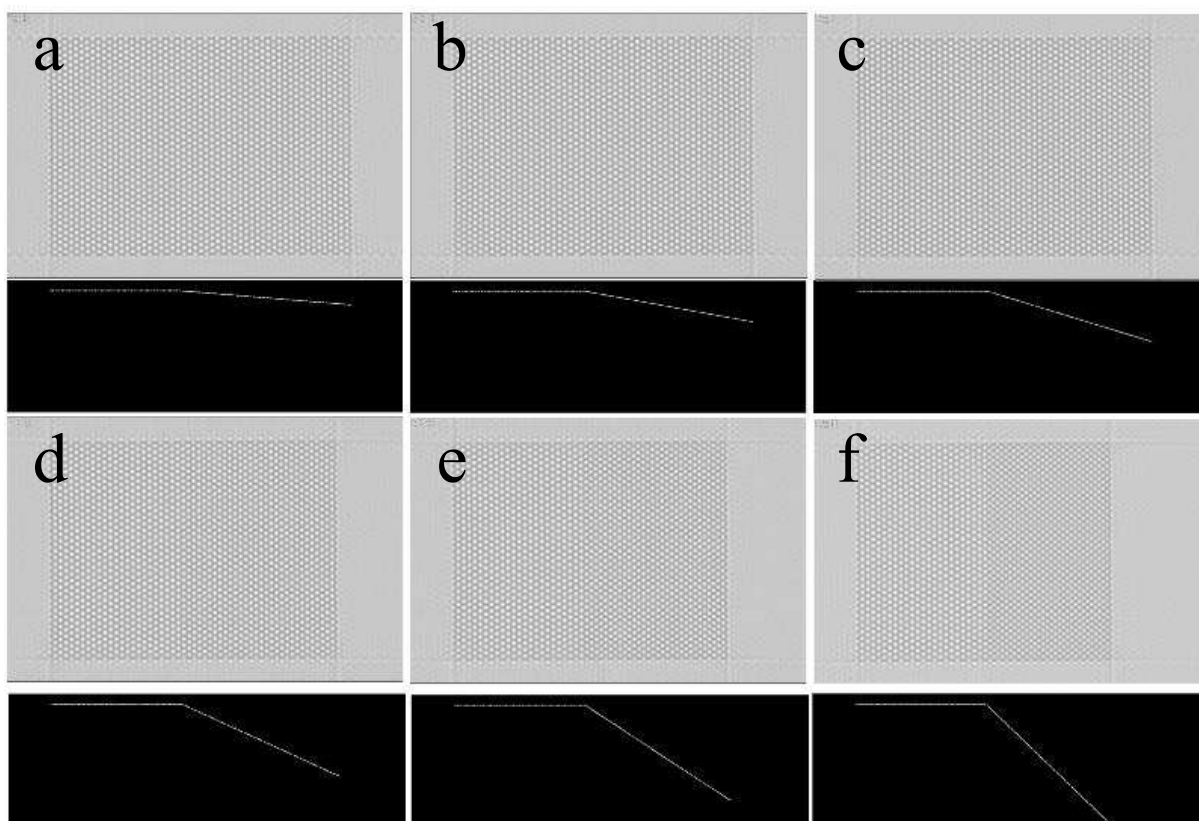


Figure S2. Multi-slice image simulations of graphene with a tilted section for tilt angles of (a) 4.7°, (b) 10.4°, (c) 17.0°, (d) 24.5°, (e) 33.3°, (f) 44°. Defocus set to 1 nm. Side views of atomic models are given below each image simulation to show the tilt angle.

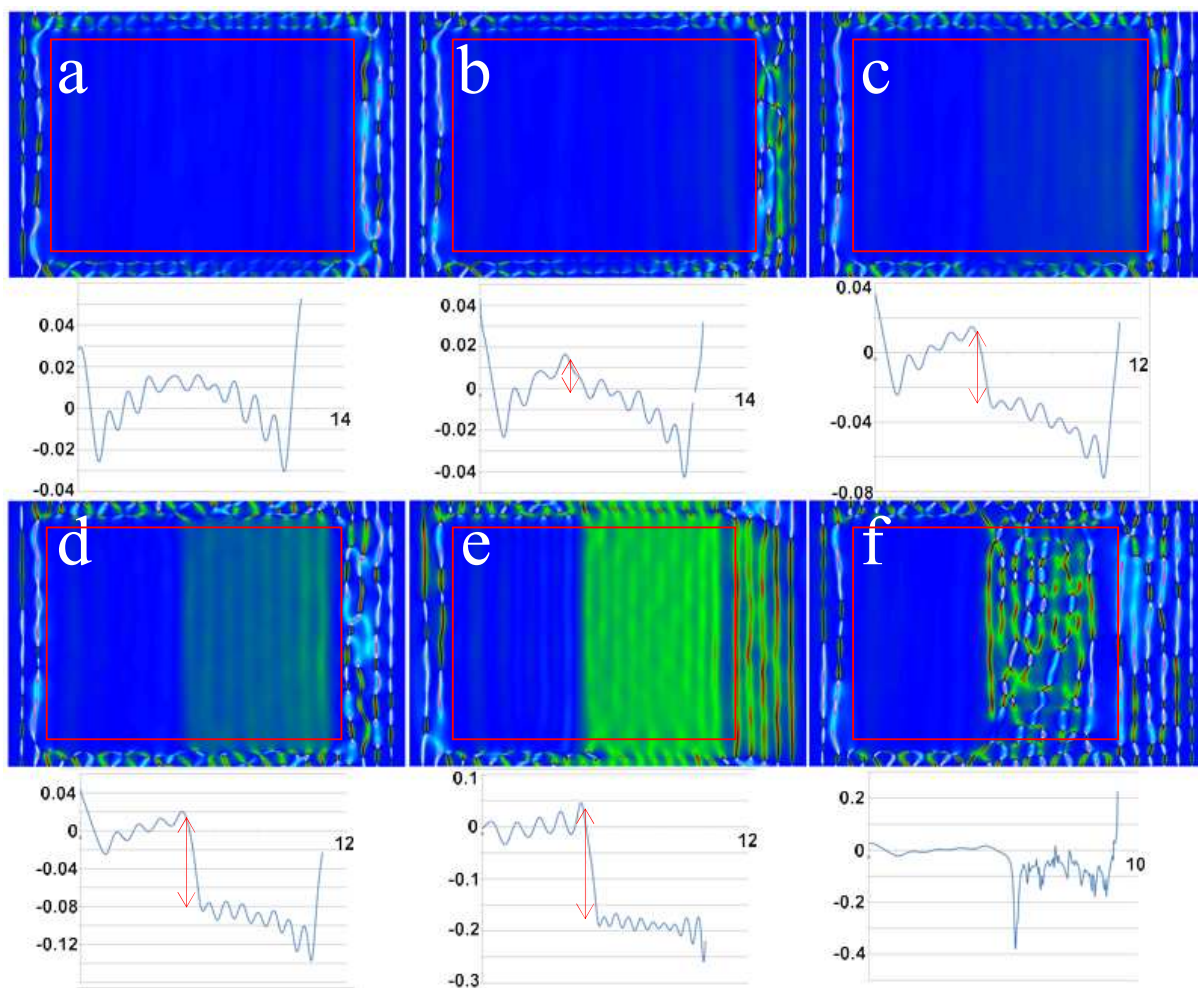


Figure S3 Geometric phase analysis (GPA) strain component ϵ_{xx} obtained from the respective image simulations in Figure S2 for tilt angles of (a) 4.7° , (b) 10.4° , (c), 17.0° , (d) 24.5° , (e) 33.3° , (f) 44° . Red box indicates region used for boxed line profiles, shown below each respective GPA image. Red arrows indicate the magnitude of change in ϵ_{xx} at the tilt interface.

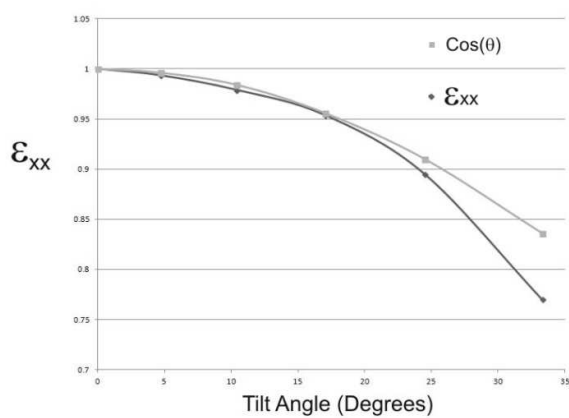


Figure S4. Plot of change of ϵ_{xx} value as a function of tilt angle, obtained from figure S3 (red arrows). Second plot shows cosine of angle as a function of angle.