As graphene is a promising material with plenty of applications, there is an urgent need for experimental methods to characterize the mechanical properties and adhesion behavior of graphene. The experiment of indentation of graphene is a direct method to measure the elastic modulus of graphene. However, measuring adhesion energy with substrate is difficult from direct experiment. Several indirect methods have been introduced to measure the adhesion energy.

In our work, we use a continuum model to simulate the process of indentation of graphene. The curves of force and displacement are drawn for different sizes and adhesion constants. For simulating multi-layer graphene, we have found a method to capture the stretch of distance between neighboring sheets.

References
