

A Phenomenological Expression for Self-Attractive Energy of Singlelayer Graphene Sheets

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Abstract : The present work studies several reasonably expected candidate integral forms for self-attractive potential energy of a free monolayer graphene sheet. The admissibility of a specific integral form for ripple formation is verified, while all others most of the candidate integral forms are rejected based on the non-existence of stable periodic ripples. Based on the selected integral form of self-attractive potential energy, some mechanical behavior, including ripple formation and buckling, of a free monolayer grapheme sheet are discussed in details

Keywords : graphene, monolayer, ripples, van der Waals energy

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