

## Accepted Manuscript

Atomic-Scale Mutual Integrals for Mixed-Mode Fracture: Abnormal Fracture Toughness of Grain Boundaries in Graphene

Nghia Trong Mai , Seung Tae Choi

PII: S0020-7683(18)30015-5  
DOI: [10.1016/j.ijsolstr.2018.01.013](https://doi.org/10.1016/j.ijsolstr.2018.01.013)  
Reference: SAS 9862



To appear in: *International Journal of Solids and Structures*

Received date: 10 September 2017  
Revised date: 8 December 2017  
Accepted date: 10 January 2018

Please cite this article as: Nghia Trong Mai , Seung Tae Choi , Atomic-Scale Mutual Integrals for Mixed-Mode Fracture: Abnormal Fracture Toughness of Grain Boundaries in Graphene, *International Journal of Solids and Structures* (2018), doi: [10.1016/j.ijsolstr.2018.01.013](https://doi.org/10.1016/j.ijsolstr.2018.01.013)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Highlights**

- A numerical calculation based on atomic-level J-based mutual integral is developed to extract the individual stress intensity factors.
- The individual stress intensity factors are calculated to quantitatively characterize the fracture behaviour of grain boundaries in graphene.
- The correlation between the fracture toughness and the density of defects is found.
- The fracture toughness of GBs in graphene is abnormally low under high mode mixity.

ACCEPTED MANUSCRIPT

Download English Version:

<https://daneshyari.com/en/article/6748372>

Download Persian Version:

<https://daneshyari.com/article/6748372>

[Daneshyari.com](https://daneshyari.com)