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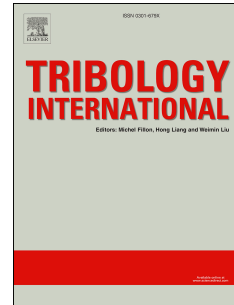
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# On DMT methods to calculate adhesion in rough contacts

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## Abstract

In this paper, we compare different rough contact-mechanics theories with the assumption of weak interfacial adhesion. Two different approaches for the local modeling of adhesion are also considered: the DMT force approach (DMT-F) and the Maugis' approximation (DMT-M). The first approach is based on the idea of summing up attractive interactions that act outside the contact zone; the latter considers a constant adhesive load for each asperity in contact.

A comparison with numerical data proves the DMT-F approach is very accurate when hard solids and low adhesive interactions are considered. The DMT-M approach shows, instead, less accuracy especially at low fractal dimensions.

Keywords: Adhesion; rough contact mechanics; pull-off force; DMT theory

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