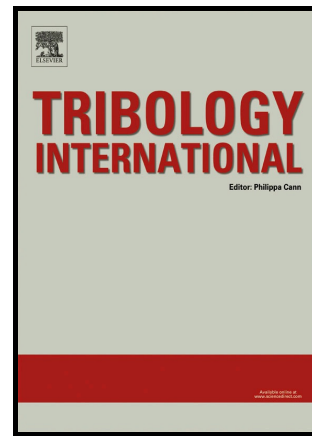


## Author's Accepted Manuscript

Research on fractal model of normal contact stiffness between two spheroidal joint surfaces considering friction factor

Qi Chen, Fan Xu, Peng Liu, Hao Fan



[www.elsevier.com/locate/jtri](http://www.elsevier.com/locate/jtri)

PII: S0301-679X(16)00035-9  
DOI: <http://dx.doi.org/10.1016/j.triboint.2016.01.023>  
Reference: JTRI4034

To appear in: *Tribology International*

Received date: 7 December 2015  
Revised date: 2 January 2016  
Accepted date: 12 January 2016

Cite this article as: Qi Chen, Fan Xu, Peng Liu and Hao Fan, Research on fractal model of normal contact stiffness between two spheroidal joint surface considering friction factor, *Tribology International* <http://dx.doi.org/10.1016/j.triboint.2016.01.023>

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 galley proof before it is published in its final citable 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.

## Research on fractal model of normal contact stiffness between two spheroidal joint surfaces considering friction factor

Qi Chen<sup>1</sup>, Fan Xu, Peng Liu, Hao Fan

School of mechanical and automotive engineering, Hefei University of Technology, Hefei 230009

**Abstract:** In order to precisely calculate normal contact stiffness (NCS), this paper discusses the fractal model to calculate NCS for spheroidal contact bodies considering friction factor. The numerical results show that the relationship between NCS and normal load is direct or inverse ratio decided by the value of fractal dimension; as fractal dimension, material property parameters and curvature radius increase, NCS adds; as friction coefficient and roughness amplitude rises, NCS falls instead; It is effective to increase NCS by choosing the internal contact, improving surface quality of contacts and raising the yield strength of the softer material.

**Key words:** Normal Contact Stiffness; Spheroidal Joint Surfaces; Friction; Fractal Theory

Accepted manuscript

<sup>1</sup> Corresponding author: Tel: 86+13865989900, [qichen@hfut.edu.cn](mailto:qichen@hfut.edu.cn) [chen.4641@yahoo.com](mailto:chen.4641@yahoo.com)

Download English Version:

<https://daneshyari.com/en/article/614322>

Download Persian Version:

<https://daneshyari.com/article/614322>

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