

# Accepted Manuscript

Fatigue crack growth modeling and prediction with uncertainties via stochastic perturbation series expansion method

Zhiping Qiu , Yuning Zheng

PII: S0020-7403(17)31038-X  
DOI: [10.1016/j.ijmecsci.2017.10.020](https://doi.org/10.1016/j.ijmecsci.2017.10.020)  
Reference: MS 3986



To appear in: *International Journal of Mechanical Sciences*

Received date: 4 May 2017  
Revised date: 28 September 2017  
Accepted date: 13 October 2017

Please cite this article as: Zhiping Qiu , Yuning Zheng , Fatigue crack growth modeling and prediction with uncertainties via stochastic perturbation series expansion method, *International Journal of Mechanical Sciences* (2017), doi: [10.1016/j.ijmecsci.2017.10.020](https://doi.org/10.1016/j.ijmecsci.2017.10.020)

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**

- The representative parameter of the crack growth model is considered to be the combination of a deterministic term and a stochastic perturbation term.
- The deterministic crack growth model can be modified by introducing a corrected term into the expression of crack length.
- The stochastic perturbation series expansion method (SPSEM) is proposed to predict the stochastic characteristics of crack length history.
- The predicted crack length results show good agreement with experimental results and Monte-Carlo simulation results.

ACCEPTED MANUSCRIPT

Download English Version:

<https://daneshyari.com/en/article/7174004>

Download Persian Version:

<https://daneshyari.com/article/7174004>

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