

Accepted Manuscript

Shakedown analysis of engineering structures under multiple variable mechanical and thermal loads using the stress compensation method

Heng Peng , Yinghua Liu , Haofeng Chen , Jun Shen

PII: S0020-7403(17)33622-6
DOI: [10.1016/j.ijmecsci.2018.03.020](https://doi.org/10.1016/j.ijmecsci.2018.03.020)
Reference: MS 4230



To appear in: *International Journal of Mechanical Sciences*

Received date: 20 December 2017
Revised date: 25 February 2018
Accepted date: 15 March 2018

Please cite this article as: Heng Peng , Yinghua Liu , Haofeng Chen , Jun Shen , Shakedown analysis of engineering structures under multiple variable mechanical and thermal loads using the stress compensation method, *International Journal of Mechanical Sciences* (2018), doi: [10.1016/j.ijmecsci.2018.03.020](https://doi.org/10.1016/j.ijmecsci.2018.03.020)

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

- A novel numerical method is developed for shakedown analysis of engineering structures under multiple variable mechanical and thermal loads.
- Without needing to perform mathematical programming, the method is a two-level iterative procedure based on a series of linear elastic finite element solutions.
- Practical shakedown problems under multi-dimensional loading domains are effectively solved and analyzed.
- Alternating plasticity and ratcheting mechanism to determine shakedown boundary of structures are revealed.
- Numerical applications show the proposed method turns out to be of high accuracy and efficiency, and is well suited for shakedown analysis of large-scale engineering structures.

Download English Version:

<https://daneshyari.com/en/article/7173802>

Download Persian Version:

<https://daneshyari.com/article/7173802>

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