

## Accepted Manuscript

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PII: S0142-1123(16)30336-X

DOI: <http://dx.doi.org/10.1016/j.ijfatigue.2016.10.028>

Reference: JIJF 4112

To appear in: *International Journal of Fatigue*

Received Date: 20 September 2016

Revised Date: 13 October 2016

Accepted Date: 16 October 2016

Please cite this article as: Carpinteri, A., Kurek, M., Łagoda, T., Vantadori, S., Estimation of fatigue life under multiaxial loading by varying the critical plane orientation, *International Journal of Fatigue* (2016), doi: <http://dx.doi.org/10.1016/j.ijfatigue.2016.10.028>

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Submitted to INTERNATIONAL JOURNAL OF FATIGUE - Special Issue on  
'Multiaxial Fatigue 2016: Experiments and Modeling' - September 2016  
REVISED VERSION - October 2016

**ESTIMATION OF FATIGUE LIFE UNDER MULTIAXIAL LOADING  
BY VARYING THE CRITICAL PLANE ORIENTATION**

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**ABSTRACT**

Fatigue life of different metallic materials under multiaxial loading is evaluated by employing the critical plane-based criterion proposed by some of the present authors. According to such a criterion, the multiaxial fatigue strength is assessed through an equivalent stress expressed by a linear combination of the normal stress amplitude and the shear stress amplitude acting on the critical plane. The critical plane orientation is determined by a novel expression, which is a non-linear function of the ratio between the fully reversed stress fatigue limits ( $\tau_{f,-1}/\sigma_{f,-1}$ ), and such an expression can be employed for any value of

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