

Accepted Manuscript

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PII: S0013-7944(18)30676-3

DOI: <https://doi.org/10.1016/j.engfracmech.2018.09.005>

Reference: EFM 6140

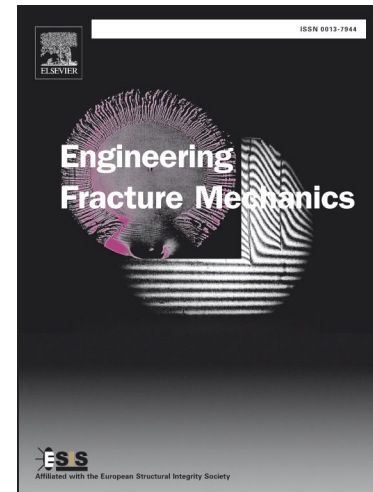
To appear in: *Engineering Fracture Mechanics*

Received Date: 5 July 2018

Accepted Date: 4 September 2018

Please cite this article as: Chen, D.H., Chen, L., The admissible range of notch root radius for applying the singular stress field to its fracture analysis, *Engineering Fracture Mechanics* (2018), doi: <https://doi.org/10.1016/j.engfracmech.2018.09.005>

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The admissible range of notch root radius for applying the singular stress field to its fracture analysis

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Abstract

In this study, the problem of “what is the critical value of notch root radius ρ_{max} below which the fracture load of the notch with $\rho \neq 0$ can be evaluated by using the singular stress field for a sharp notch” is investigated analytically. Based on the existing fracture criteria, the ultimate loading stresses σ_f and σ_F are respectively calculated by using numerical analysis called body force method for the blunt notch and by using the singular stress field for the corresponding sharp notch. By comparing σ_f with σ_F , the admissible maximum notch root radius ρ_{max} is investigated. Based on the investigation, it is found that when the notch root radius

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