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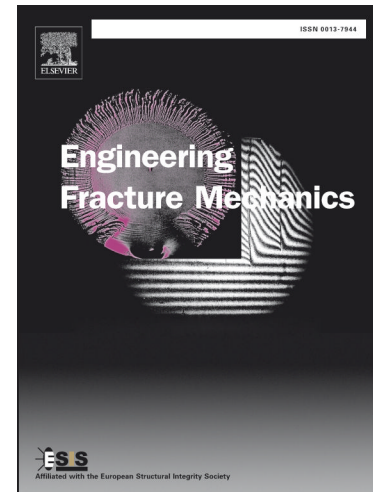
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Characterization of the creep interaction effect for twin semi-elliptical surface cracks under
combined tension and bending loading

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Abstract:

The interaction of twin semi-elliptical surface cracks subjected to combined tension and bending in the creep regime is studied. Moreover, the crack growth behavior in the presence of multiple cracks is simulated to reveal the effect of creep interaction factor. The tension load produces a larger creep interaction factor than those for pure bending and combined tension and bending. For the combination of cracks, a greater value of the creep interaction factor is permitted compared with the linear-elastic condition. The enhancement of creep crack growth rate in multiple cracks is diminished as the improvement of creep interaction factor is lower than 30%.

Keyword: multiple cracks interaction; combined tension and bending; creep regime; crack growth; combination rule.

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