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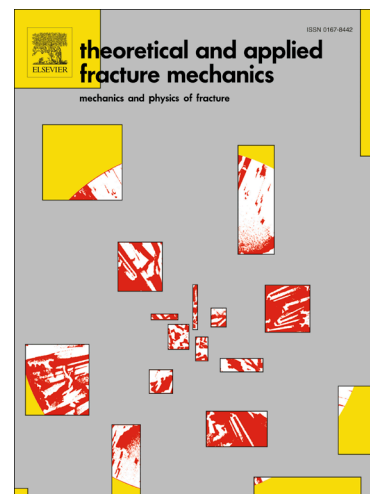
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WELDED JOINTS UNDER MULTIAXIAL NON-PROPORTIONAL LOADING

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ABSTRACT

The present paper examines the fatigue behaviour of a fillet-welded tubular T-joint in the so-called H structural component of an agricultural sprayer. Since the experimental measurements, performed in some control locations of the equipment, have highlighted a stress/strain field of random nature, an equivalent deterministic cyclic loading is here defined in order to simplify the fatigue analysis. Such an equivalent loading is able to accumulate damage values equal to the experimental ones in correspondence of the above control locations. The present study shows that it is possible to neglect the actual nature of loading provided that a suitable equivalent deterministic cyclic loading is taken into account.

KEYWORDS: agricultural sprayer, critical plane-based criteria, multiaxial fatigue, non proportional loading, T-joint.

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