Fatigue crack propagation from ‘maintenance’ type defects

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Fatigue life assessment for maintenance type defects (dent, scratch, ...)
First propagation stages under complex stress field induced by the geometry of the defect and the associated residual stresses

**Highlights**

Implementation of the electrical potential monitoring technique with digital calibration under different conditions (temperature, more or less confined plasticity, generalized plasticity, multi point measurements): minimum crack depth detected: 50 µm

Estimation of the proportion of initiation/propagation in the total lifetime

Evaluation and simulation of residual stress effects on fatigue crack propagation rate for dent or scratch defects

Characterization of the evolution of crack fronts under complex local fields and comparison to Finite element simulations

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**Crack growth retardation induced by residual stresses**

**Minimum crack size detection: 50 µm**

**Fissureuse**

‘Machining’ surface crack by polishing

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3 PhD, 2 masters / Academic collaboration: LMT Cachan, Univ. Oxford / Industrial collaboration: Safran, Framatome