

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

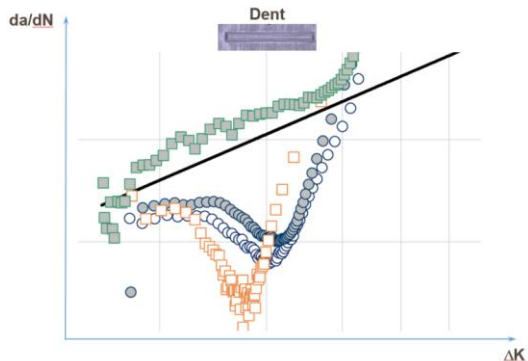
Implementation of the **electrical potential monitoring** technique with digital calibration under different conditions (temperature, more or less confined plasticity, generalized plasticity, multi point measurements) : minimum crack depth detected : **50 μm**

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

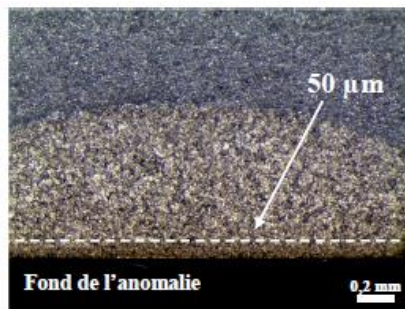
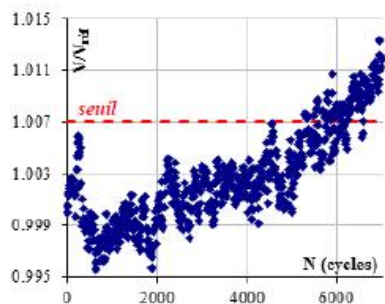
Evaluation and simulation of **residual stress effects** on fatigue crack propagation rate for dent or scratch defects

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

Crack growth retardation induced by residual stresses



Minimum crack size detection : 50 μm



Fissureuse

'Machining' surface crack by polishing

