

# Residual stress determination

## *Fatigue of components and structures*



From X-ray diffraction to incremental hole drilling

## YOUR EXPECTATIONS

You want to determine residual stresses in order to:

- Develop or test a manufacturing process:
  - Raw part
  - Heat or thermo-chemical treatment (tempering, case hardening, etc.)
  - Machining (grinding, milling, turning, etc.)
  - Work treatment (shot peening, roller-burnishing, etc.)
- Compare several processes concerning fatigue strength or stress corrosion.

## OUR SOLUTIONS

Definition and implementation of suitable protocols:

- Advice and support for developing an experimental design
- Assistance in drafting specifications

Surface or in depth analysis:

- X-ray diffraction method (non-destructive)
- Incremental hole drilling method (destructive)

Working with large instruments:

- Neutron radiation method (non-destructive)
- Synchrotron radiation method (non-destructive)

Assistance in exploiting and capitalising on the results.

## YOUR BENEFITS

- Comprehensive management of your experiment requirements
- Project monitoring adapted to your demands
- Standardised tests (EN15305-2009 and ASTM E837-2008)
- Services of a provider with proven skills (35 years of capitalising on experience) that is certified both by approved organisations (ISO 9001) and its customers (Safran, Airbus, Renault, PSA, etc.)
- Access to Cetim's manifold skills to help you optimise your products and processes.



**Question and Answer Service**

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