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# Optical metrology for Non-destructive testing and experimental mechanics

- Shearography – speckle pattern shearing interferometry
- Shearography directly measures the surface displacement gradients
- Objective – coupling experimental results with numerical models

## 1. Strain measurements

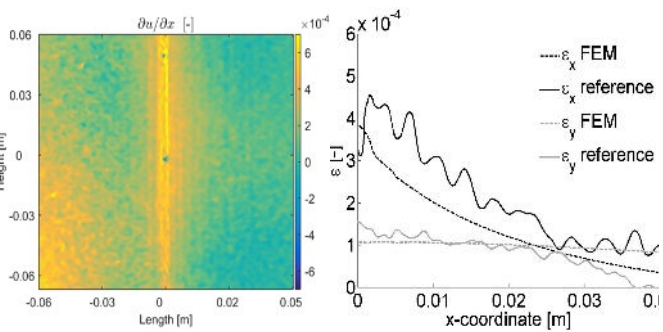
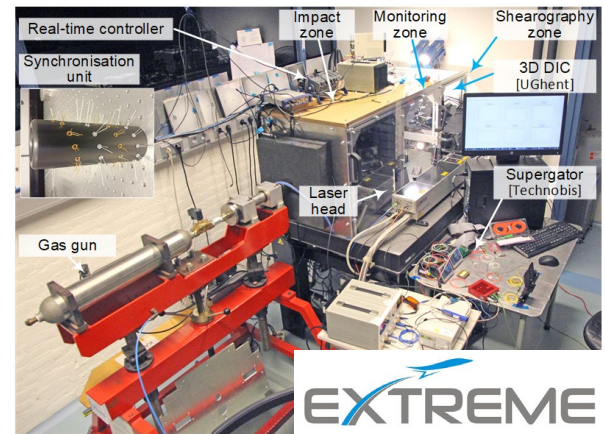
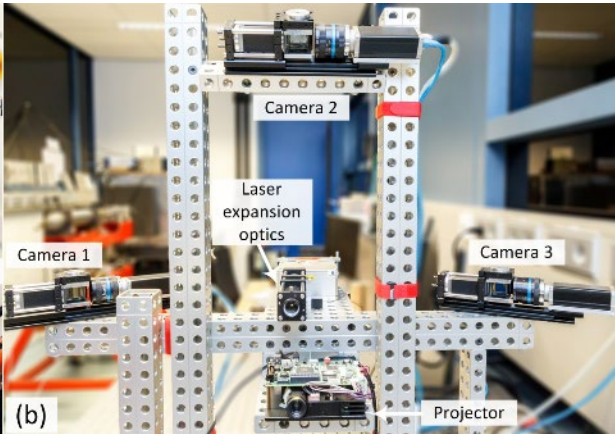
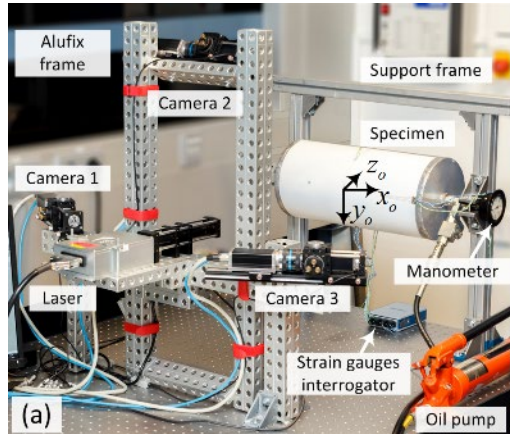
→ to measure the material behaviour

## 2. 3D shape shearography:

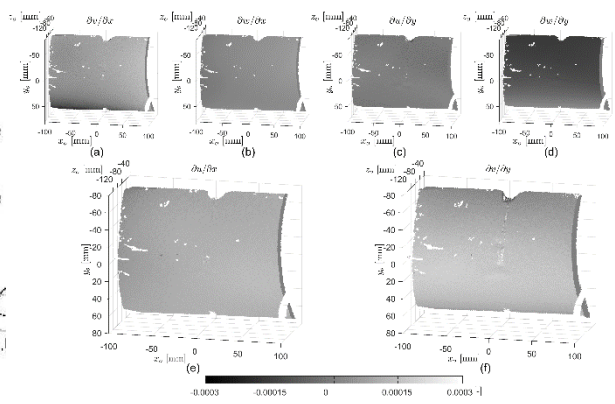
→ to measure curved surfaces

## 3. H2020 EXTREME shearography:

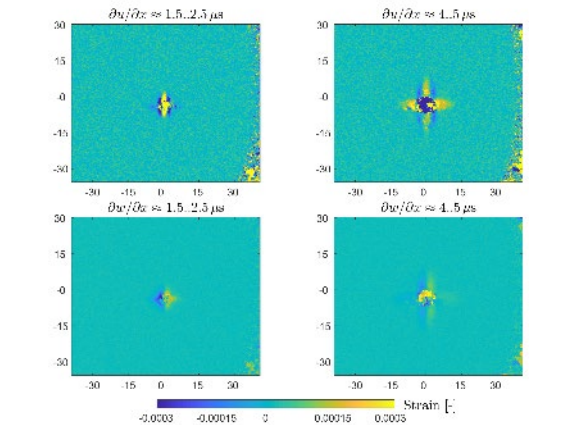
→ during impact with  $\mu\text{s}$  time resolution



Comparison of the measured (shearography) and the numerically predicted thermal strains  
A. Anisimov, Strain, 54(2), e12260 (2018)



In- and out-of-plane strains over 3D surface  
A. Anisimov, Appl. Opt. 58, 498-508 (2019)



EXTREME shearography during impact  
A. Anisimov, Optics and lasers in engineering. In press (2020)