LBMC
Laboratoire de Biomécanique et Mécanique des Chocs

UMR_T 9406 IFSTTAR-UCBL

DynaStruct

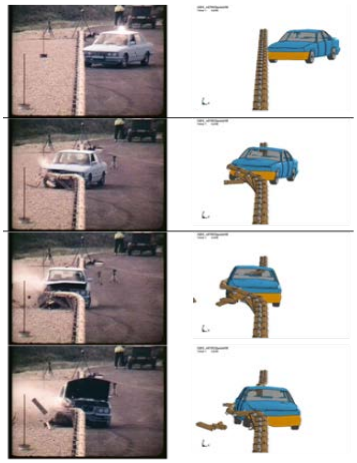
Experimental Platform in **Dynamics of Structures**

Structures and Materials
High strain rate testing

- Complex materials specimen
- Elementary structures
- From statics to dynamics

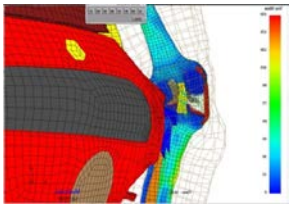
Static and dynamic tests

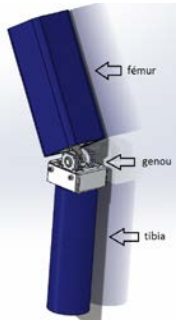
- Tensile, bending and compressive loading
- High strain rate from 200 s^{-1} to 10000 s^{-1}
- Specific test assembly
- Confidential working area



Expertise and Techniques

- Skill in dynamic tests (high strain rate material characterization, modal analysis…)
- Static tests
- Low and high impedance materials





Access to resources

- Working area, test devices

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IFSTTAR

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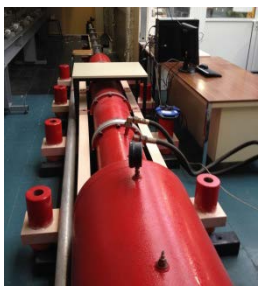
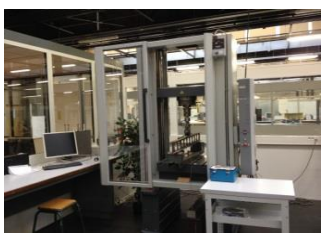
Test devices

- Split Hopkinson Pressure Bars (SHPB)
  for dynamic characterization materials
  - Stress-Strain curves at constant strain rate
  - 4 sets of bars (steel, aluminium, POMC, PETP)
  - Strain rate up to10000 s-1
  - Impact speed up to 20m/s
  - Set of impactors for each set of bars

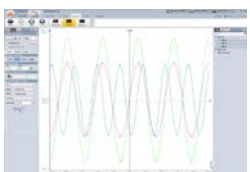


- Block-Bar device for dynamic compressive tests
  - Impactor 50kg
  - Impact speed 6-8m/s



- Tensile device Zwick250 – Quasi-static
  - 25 tonnes capacity
  - Sensors 1kN, 5KN, 10kN and 250kN

Measurement devices



- High performance data acquisition system DEWETRON-30-8 (2MHz)
  - 4 HSI-STG input modules
    (Strain gauge bridge - high bandwidth)
  - 1 DAQP-LV input module (50V)
  - Dewesoft - Analysis Software
- Digital sampling oscilloscope Picoscope 5442A – 4 channels (60MHz)
- Acquisition system Siglab 2022A – 2 inputs – 2 outputs – 20kHz
- Accelerometers, load sensors, LVDT sensors, impact hammer, vibration exciter

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