

Special Session:

State-of-the-art on the dynamic behaviour of materials and its applications

Organizers:

Borja Erice, Mondragon Unibertsitatea & IKERBASQUE (Spain)

Louise Le Barbenchon, Arts et Métiers, I2M (France)

Nina Čeh, University of Rijeka (Croatia)

Maria Lißner, University of Oxford (United Kingdom)

Brief description:

Experimental and numerical research of materials and structures in dynamic environments (e.g. crashes, earthquake, and impact) are paramount for ensuring structural reliability and enhancing safety of engineering designs under such extreme environments. By addressing materials' dynamic behaviour, researchers inform predictive models for performance, thus contributing to technological advancements and improving risk mitigation strategies in critical applications.

This special session is motivated by the aims and objectives of DYMAT – Europe's leading research association in dynamic behaviours of materials. It focuses on three major research areas that are still not well understood and provide opportunities for innovation in material development and structural designs:

- I. New materials (e.g. advanced processing technologies, green and sustainable composites, electrical mobility, space exploration, bio materials)
- II. Advances in experimental mechanics (e.g. future of dynamic testing devices, complex loading scenarios, micromechanics)
- III. Challenges in modelling of materials and structures (e.g. artificial intelligence, advanced modelling, open-source simulation software)

Submissions covering any of the aforementioned topics and its applications are encouraged.