

ICSI 2019

Multiaxial fatigue and VHCF: experimental, theoretical and numerical approach

Fatigue is considered one of the main causes for in service failure of mechanical components and structures. The need for the weight reduction of components and a growing need for greater lifespans of equipment, forced the understanding of the fatigue behavior of materials under multiaxial loading cycles and increased number of loading cycles. It is generally recognized that multiaxial stresses occur in many full-scale structures, being rare the occurrence of pure uniaxial stress states. Nevertheless, the highly cost of materials testing under multiaxial loading and for very high number of cycles, was a serious drawback for the research under these testing conditions.

This symposium is intended to have the present status of the specimens and testing machines where research can be carried out for performing multiaxial fatigue tests under bi-axial stress states and very high cycle fatigue.

Research on the performance of multiaxial fatigue tests under axial/torsion loading and in plane bi-axial testing using low cost electromagnetic actuators or piezo-electric actuators either in classical cylindrical or in cruciform specimens are welcome.

Further research is needed and is being carried out concerning multiaxial very high cycle fatigue in order to achieve better improvements in testing materials under multiaxial very high cycle fatigue.

The main objective of this International Symposium is to bring together researchers, engineers, and students to present and exchange new data and new ideas, allowing an interesting multidisciplinary discussion.

Organizing Committee

Luis Reis - LAETA, IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Portugal E-mail:

luis.g.reis@tecnico.ulisboa.pt

Manuel Freitas - LAETA, IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Portugal E-mail:

manuel.freitas@tecnico.ulisboa.pt

Vitor Anes - LAETA, IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Portugal -

vitor.anes@tecnico.ulisboa.pt