

Università degli Studi di Pavia Computational Mechanics & Advanced Materials Group - DICAr



From images to material characterization of AM porous metal structures

SEMINAR

The rapid development of 3D printing technologies allowed the production of customized microporous structures with an extended range of industrial applications and design flexibility. However, the complexity of the manufacturing process puts uncertainty on the confidence levels of the end product material properties. The mechanical behavior of such structures is highly influenced by the process parameters, process-induced porosity state and geometrical deviations of the internal microstructures. These geometrical variations can be obtained by computer tomography Nonetheless, numerical analysis on such geometries remains a challenge. In this seminar, an efficient numerical pipeline from CT images to the material characterization of such parts is presented numerical approach in comparison to a An embedded conventional Finite Element Method allows direct incorporation o the image-based geometries into the numerical analysis without a need for tedious mesh generation. A comparison of the numerical results to the experimental data provides confidence in the proposed methodology to provide reliable material estimates in the field of AM product simulation.

Nina Korshunova, M.Sc. (hons.)

Chair for Computation in Engineering Technical University of Munich



December 18th, 12:00 (sharp) Aula MS1, DICAr Via Ferrata, 3 – Pavia