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DIPARTIMENTO  
DI INGEGNERIA CIVILE  
E AMBIENTALE

INDICEE - International Doctorate in  
"Civil and Environmental Engineering"  
Dottorato Internazionale  
Ingegneria Civile e Ambientale



**18<sup>th</sup>**  
**JAN**  
**2024**

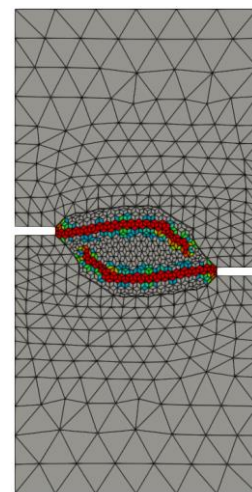
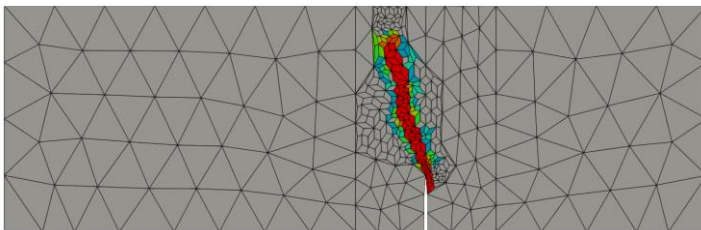
**Seminar**  
**Meshless applications**  
**in solid mechanics**  
**Lapo Gori, PhD**

**11,00-**  
**12,00**  
(CET Italy time)

Room 177 – Scuola di Ingegneria  
Via S. Marta 3 – Firenze  
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## Abstract

*While the standard finite element method is capable to provide reliable results in a large number of engineering applications, complex problems, often characterised by both physical or geometrical nonlinearities, require the use of more advanced numerical methods. Meshless methods, with their different approaches to the generation of approximation functions and to the integration of the governing equations fall within the category of advanced numerical methods. This talk focuses on the so-called Smoothed Point Interpolation Methods, and their application to different fields of solid mechanics, like continuum damage mechanics, phase-field modelling of fracture, and geometrically exact beams.*



*Lapo Gori is a tenured assistant professor at the Department of Structural Engineering of the Federal University of Minas Gerais. He has a Civil Engineering degree from the University of Florence and received his PhD in Structural Engineering from the Federal University of Minas Gerais. He is a member of the development team of the open-source program for structural analysis INSANE (INteractive Structural ANalysis Environment) and has been a member of the executive board of the Brazilian Association for Computational Methods in Engineering (ABMEC), as treasurer, from 01/2021 to 12/2022. His main contributions are in the field of computational mechanics, with meshless methods applied to damage and fracture mechanics, with recent interests in the field of artificial intelligence applied to structural engineering.*

Participation is free but please send an email to register yourself to [enzo.marino@unifi.it](mailto:enzo.marino@unifi.it).