

CONFÉRENCE TECHNIQUE - (SEMINAR)

Integrated seismic and energy efficiency retrofitting of existing RC buildings

Dr Ricardo Monteiro, IUSS Pavia, Italy

• **Date : Jeudi le 15 décembre**

BIENVENUE À TOUS

• **Heure : 13 :00 -14 :00**

• **PRESENTIEL : LOCAL L3816**

• **(En ligne - Zoom**

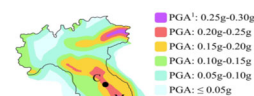
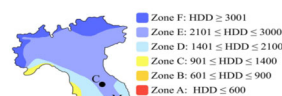
<https://polymtl-ca.zoom.us/j/86010188212?pwd=T1U5dmhibGk2eIJ0c2tBLzhINjNIUT09>

Meeting ID: 860 1018 8212

Passcode: 339050

Abstract : A large portion of aging existing buildings in Italy and Europe are susceptible to significant structural damage during earthquakes and suffer from poor energy performance. When considering how to improve the seismic performance and energy efficiency of these structures, retrofitting has been shown to be a more attractive alternative compared to complete demolition and reconstruction. Recently, research efforts have begun to focus on developments in combined and integrated seismic and energy retrofit frameworks and techniques, showing that investing in combined retrofitting schemes is often more cost effective than conducting either energy-efficiency or seismic retrofitting alone. As new national and transnational policies place greater emphasis on the environmental impact of the built environment, it is crucial that combined retrofit schemes be evaluated in a comprehensive manner that allows for the selection of optimal schemes when a range of key sustainability-related decision variables (DVs) are considered. This talk will present the results of recent research on the selection of a life cycle assessment (LCA)-based optimal combination of seismic and energy-efficiency retrofit schemes for an existing reinforced concrete case-study building in Italy.

About the Speaker:



Site Conditions:
Città di Castello (C): HDD=2347, $PGA^2=0.300g$;
Isola del Gran Sasso d'Italia (M): HDD=2038, $PGA=0.293g$;
Catania (W): HDD=833, $PGA=0.287g$.

¹PGA values for 712 year return period on rock
²PGA values for 712 year return period at site (Soil Class B)

(a) Climate conditions; and (b) seismic hazard at each of the sites (C, M, and W) investigated in this study.

Ricardo Monteiro is Associate Professor at the University School of Advanced Studies IUSS Pavia, where he is also the Coordinator of the Doctoral Programme in Understanding and Managing Extremes (UME) (formerly ROSE School). He is also Senior Advisor for the European Centre for Training and Research in Earthquake Engineering (EUCENTRE) in Italy and affiliated external researcher at the University of Porto, Portugal.