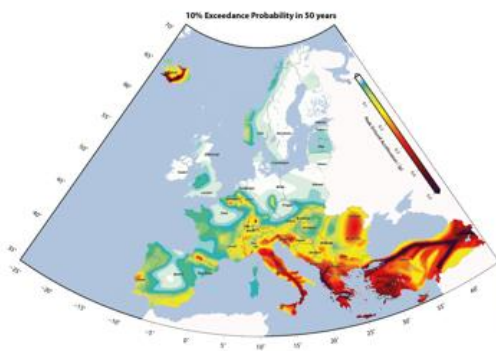


Titolo del corso: SEISMIC RISK ANALYSIS: HAZARD, FRAGILITY AND CONSEQUENCE MODELLING

Docenti: Mariano Angelo Zanini - University of Padova - Department of Civil, Environmental and Architectural Engineering (DICEA)

Programma: Many countries worldwide have to face with the occurrence of earthquakes, and thus the engineering community is asked to design seismic-resistant structural systems in order to reduce as much as possible potential disruption, losses and fatalities at the societal level. In the past decades, many researchers dealt with the development of seismic design and assessment methods, initially based on deterministic approaches and subsequently enhanced with more refined probabilistic approaches. The present course will provide insights on the current state-of-research methodologies used for assessing both seismic risk and reliability of structural systems, with emphasis to bridges and reinforced concrete structures. The course will illustrate main concepts underlying the Probabilistic Seismic Hazard Analysis (PSHA) method, as well as main methods currently in use for the quantification of seismic fragility and consequence modelling. The final part will be devoted to illustrate main indexes that can be computed in order to provide a quantitative estimation of seismic risk for new or existing structural systems.



HAZARD



VULNERABILITY



EXPOSURE

Testi di riferimento:

- Benjamin J.R., Cornell C.A. *Probability, Statistics and Decision for Civil Engineers*. Dover Pubns.
- Chopra A.K. *Earthquake Dynamics of structures. A Primer*. EERI – Earthquake Engineering Research Institute.
- McGuire R.K. *Seismic hazard and risk analysis*. EERI – Earthquake Engineering Research Institute.