



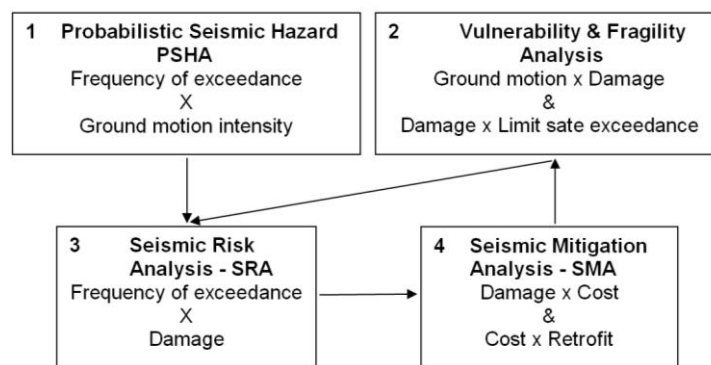
SUSTAINABLE SEISMIC RISK MITIGATION STRATEGIES BASED ON PROBABILISTIC LOSS SCENARIOS

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Decisions to mitigate the seismic risk require a consistent approach for assessing the effects of future earthquakes on civil engineering structures, in face of the available economic resources and the state-of-art of the sustainable seismic retrofitting techniques.

The first part of this presentation aims to show the efforts that are being carried out by the seismic engineering experimental research community to develop feasible techniques for seismic strengthening/protection of structures that are both cost and environmentally efficient.

The second part of the lecture will address the subject of seismic risk assessment and evaluation of the most effective mitigation strategies for the existing building stock of large urban areas. An iterative procedure, as shown in the figure below would be the ideal approach to that purpose.



However given the complexity of searching an optimal solution, based on cost benefit analysis involving a great amount of parameters and variables, the method presented relies on prior assumptions resulting from the disaggregation of seismic loss scenarios taking into account the three components of seismic risk analysis: hazard, vulnerability and exposition.

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