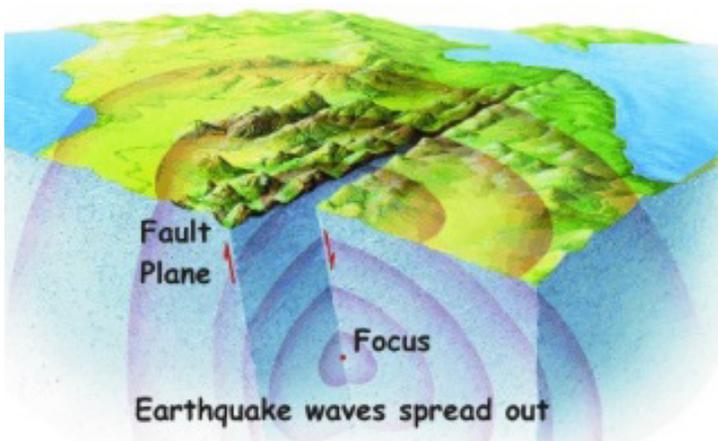
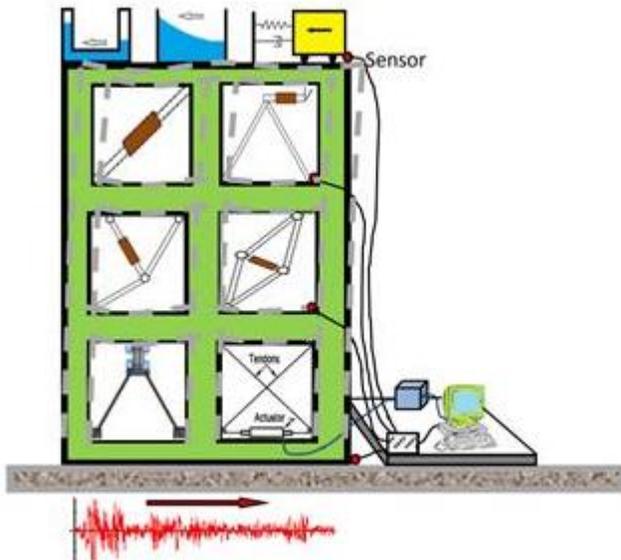


Introduction to Seismology and Earthquakes



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Every day there are about fifty earthquakes worldwide that are strong enough to be felt locally, and every few days an earthquake occurs that is capable of damaging structures. Each event radiates seismic waves that travel throughout Earth, and several earthquakes per day produce distant ground motions that, although too weak to be felt, are readily detected with modern instruments anywhere on the globe. Lectures will be about seismology as a science that studies these waves and what they tell us about the structure of Earth and the physics of earthquakes. It is the primary means by which scientists learn about Earth's deep interior, where direct observations are impossible, and has provided many of the most important discoveries regarding the nature of our planet. It is also directly concerned with understanding the physical processes that cause earthquakes and seeking ways to reduce their destructive impacts on humanity.



Passive Control of Structures

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Earthquakes are potentially devastating natural events which threaten lives, destroy property, and disrupt life-sustaining services and societal functions. In recent years, innovative means of enhancing structural functionality and safety against them have been in various stages of research and development.

The large diversity of passive control devices indicates the importance that has been devoted to structural control for vibration reduction in buildings and bridges in the last decades. Lectures will provide a brief description of each control scheme describing the main properties of different anti-seismic solutions and presenting the most relevant developments in this area. Control methodologies and devices are highlighted identifying their advantages and limitations. The main focus will be given on the passive control system. Different passive techniques and devices will be described and the effectiveness in mitigating seismic hazard for structures will be addressed.