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Response of Clayey Soils during and after an Earthquake

Earthquakes can have devastating effects on communities and infrastructure due to the damage and loss of life that they cause. In order to design infrastructure to withstand the shaking from an earthquake, it is important to understand how the soil beneath the infrastructure will behave during an earthquake and immediately following an earthquake. Historically, engineers have seen that clayey soils will lose part of their strength as a result of shaking from an earthquake motion and that this reduction in strength can have substantial consequences such as the 1964 Anchorage Landslide and the damage to the Moss Landing Marine Laboratories. However, the amount of reduction and the mechanisms for this loss of strength are still not well understood. This research will aim to gain a better understanding of the behavior of clayey soils by examining their behavior in a controlled laboratory environment to provide engineers with additional information to design safer and more economical infrastructure.