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## The Effect of Cyclic Loading of Liquefaction on Palu Sands

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Liquefaction is a phenomenon where soil loses its strength. The phenomenon of liquefaction occurs on non-cohesive soils with medium to fine grains. The phenomenon of liquefaction occurs during an earthquake, the ground experiences shaking vibrations. Palu, Central Sulawesi, Indonesia is one of the areas affected by the liquefaction phenomenon which causes damage to infrastructure in the area. The Palu earthquake that occurred on September 28, 2018, at 18:02:44 WITA with a magnitude of  $M_w = 7.4$ , centered on 26 km north of Donggala, Central Sulawesi. One aspect of the assessment for soil susceptibility to potential liquefaction is laboratory tests. One common laboratory test that can be performed is the cyclic triaxial test. The factors affecting the liquefaction resistance of saturated sand are the relative density and cyclic stress ratio (CSR). The susceptibility of each relative density (30%, 50% and 70%) of the soil experiencing liquefaction and the cyclic stress ratio (0.15, 0.20 and 0.25) will be varied to see the amount of cyclic load needed until the soil experiences liquefaction, the load frequency to represent the earthquake load is 1 Hz with sinusoidal waves. This study will test the fine sands from Palu, Central Sulawesi, Indonesia, to determine their respective behavior when the soil is given a cyclic load.

**Keywords:** Cyclic Triaxial, Liquefaction, Cyclic Stress Ratio, Relative Density, Fine Sands.