



## **Instability of Sand and its Implications for the Design of Tailing Dams**

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Static liquefaction or flowslide is considered as one of the most common failure mechanisms for granular slopes or tailings dams. One of design approaches adopted is to use the residual strength or the so-called post-liquefaction undrained shear strength. However, there are a number of problems associated with this approach. One of them is that the post-liquefaction strength cannot be determined properly experimentally. The assumption of an undrained condition is also questionable for sand or tailings with relatively high permeability under static loading conditions. In this seminar, instability behavior of sand under undrained, drained, and other than undrained conditions are presented to illustrate that instability does not have to occur under an undrained condition and “undrained” does not have to be taken as a design assumption. Based on the new findings, a different design approach to use the stress ratio of instability line or the peak strength ratio is suggested.