IIT PALAKKAD

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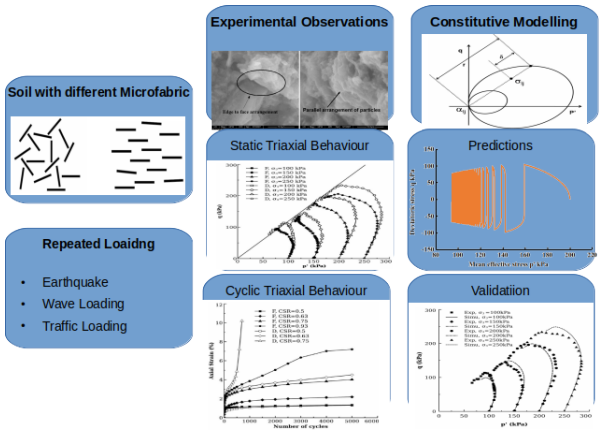
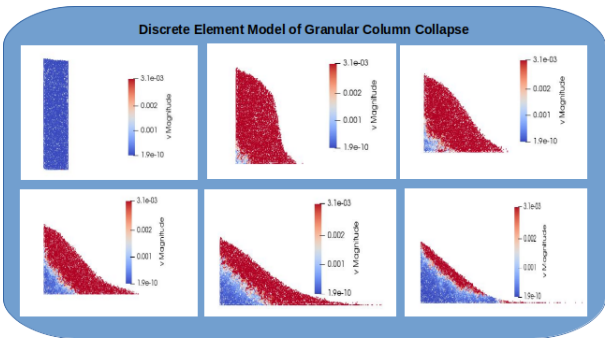
Research Interests

- Cyclic behavior of soil
- Constitutive modeling of soils
- Numerical modeling of landslide runout

Brief Summary of Research

Soil deposits are subjected to repeated loading due to phenomena like earthquakes, wave action, traffic loading etc. Soil behavior subjected to repeated loading with number of loading and unloading cycles is different from the static behavior. Many researchers are of the opinion that the accumulation of strain and pore pressure, even in fine grained soils can be critical in foundation design. Cyclic behavior of soils is one of my research area of interest. Numerical methods like finite element methods and finite difference methods are widely used for analysis of complicated geotechnical problems. The results of the numerical simulations greatly depend upon the constitutive model used in these methods, which determines the relationship between the stresses and strains developed in the material. Numerical modeling of landslide runout is also important to determine the velocity of landslide propagation, the total extend, volume and depth of deposition following landslide initiation. Discrete element method is one of the advanced numerical technique adopted to study the flow of granular particles and will be useful to study the runout behavior.





Recent Publications

1. **Venkatesh N**, **Heeralal M** and **Rakesh J Pillai** (2018). Resilient Modulus of Clayey Subgrade Soils Treated with Calcium Carbide Residue. *International Journal of Geotechnical Engineering*, DOI: 10.1080/19386362.2018.1512230
2. **Venkatesh N**, **Heeralal M Rakesh J Pillai** and **Sudheer Kumar Y** (2019). Permanent deformation behaviour of black cotton soil treated with calcium carbide residue. *Construction and Building Materials*, Vol 223, 441-449.