

## Auteur Kostas Senetakis

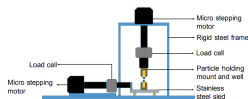


Figure 1. Schematic diagram of the inter-particle loading apparatus of the City University of Hong Kong.

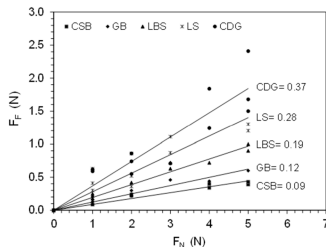
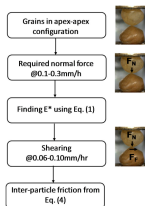


Figure 4. Variation of frictional force with normal force for the materials tested and corresponding inter-particle coefficients of friction.

[Kostas Senetakis, 2017,2018] : "Under the low normal load range applied in the study, between 1 and 5 N, we found that the frictional force is linearly correlated with the applied normal load"

# Article Stress-strain behavior of sand at high strain rates (Mehdi Omidvar et al,2012)

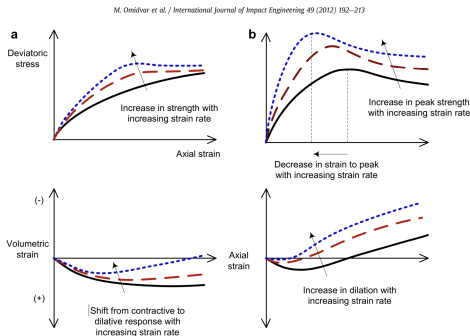


Fig. 19. Effect of increase in strain rate on stress-strain response and volumetric strains in (a) loose sand, (b) dense sand [interpreted based on data from Table 3].

"Under HSR loading, there is not enough time for strain energy accumulation, which prohibits crushing and promotes rolling-rearrangement resulting in a higher resistance to shear"

# Trouver le régime de l'état critique

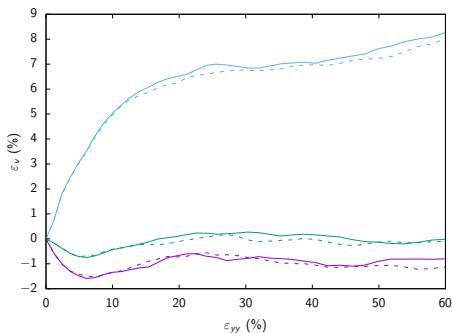


Figure 1 – petit déformation

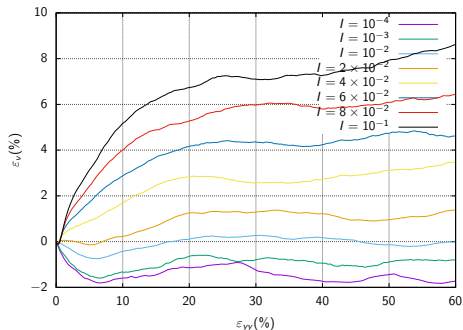


Figure 2 – grande déformation

$$\varepsilon_v = \varepsilon_x + \varepsilon_y + \varepsilon_z$$

$$\varepsilon_v = \frac{\det(h)}{\det(h_0)} - 1$$

# Trouver le régime de l'état critique

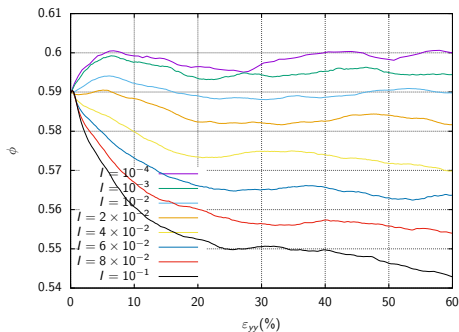


Figure 3 – Fraction solide

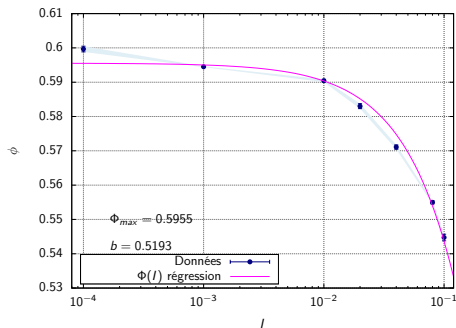


Figure 4 – grande déformation

# Trouver le régime de l'état critique

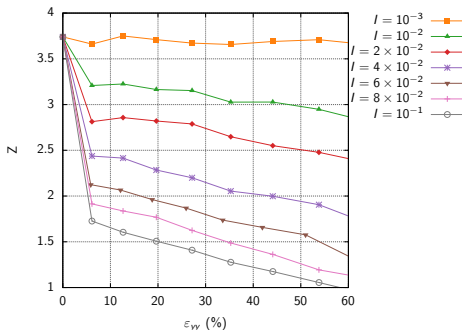


Figure 5 – Nombre de NombreCoordination

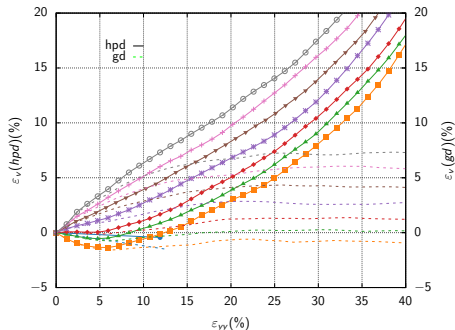


Figure 6 – Déformation Volumique

$$\text{hpd} : \varepsilon_{yy} = \frac{\Delta yy}{h_{yy}^0}; \varepsilon_v = \varepsilon_{xx} + \varepsilon_{yy} + \varepsilon_{zz}$$

$$\text{gd} : \varepsilon_{yy} = \ln\left(\frac{h_{yy}}{h_{yy}^0}\right); \varepsilon_v = \frac{\Delta V}{V_0};$$

# Trouver le régime de l'état critique

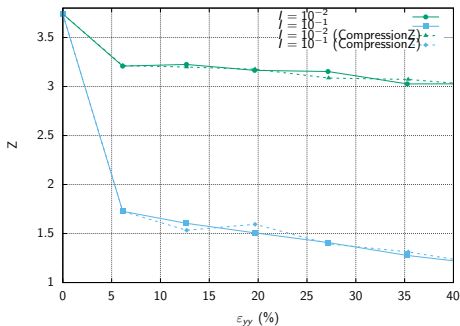


Figure 7 – Nombre de Coordination

échantillon aléatoire par compression  
dans l'axe Z

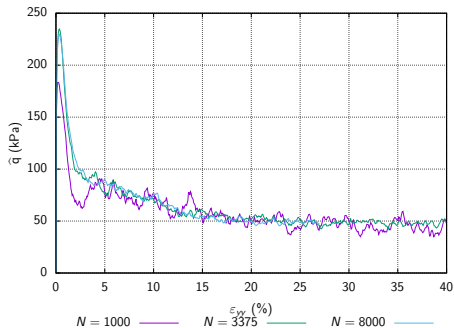


Figure 8 – Nombre de Particules

# Stabilisation d'une colonne de sol par Mohr-Coulomb

Figure 9 –  $MP=12$

Figure 10 – augmenter rigidité de condition aux limites

# Effondrement d'une colonne de sol par Mohr-Coulomb

Figure 11 – MP=1200

Figure 12 – MP=1200 Effondrement



# Poster pour la conférence "Powder and grains"