15th World Congress on Computational Mechanics (WCCM-XV)
8th Asian Pacific Congress on Computational Mechanics (APCOM-VIII)
31 July – 5 August 2022, Yokohama, Japan

# Simulation of Bearing Capacity of Pile in Crushable Soil

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Crushable soils such as volcanic soils, carbonate sand or decomposed granites whose grains are easily break under foundation pressure, especially, large magnitude of stresses under pile tips. When the grains are crushed, particle size distribution (PSD) varies followed by higher compressibility of these soils. Pile foundation's settlement in crushable soils tends to be increased. Nonetheless, design code for bearing capacity of pile in crushable soil is still unavailable leading to a lot of difficulties for engineers to have an appropriate foundation design. This paper introduces a constitutive model for soils which takes account of the breakage mechanics including the evolutions of PSD and the compressibility due to grain crushing. The model is implemented in a finite element code to simulate a past experiment of pile penetration in crushable soil. Finally, parametric studies are carried out to investigate bearing capacity of piles in crushable soil.

**Key Words:** *Bearing capacity, Simulation, Crushable soil, Pile*