



## How do granular materials deform ? An experimental and numerical study at the grain scale

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### Facts:

**Reality:** Soils composed of discrete particles assemblies

**Geotechnics:** Soils approached by classic continuum mechanics, enriched with plasticity

### Evidence:

Continuum predictions vs experimental results: **granulence**

**Statistical mechanics:** blend more physics in geomechanics

**Non extensive scaling laws:** internal lengths in confined granular media

### Experimental Investigation in 2D (1y2ε)

Statistical analysis of image derived kinematic fields

### Numerical Investigation in 3D (DEM)

Statistical analysis of numerically derived kinematic fields

