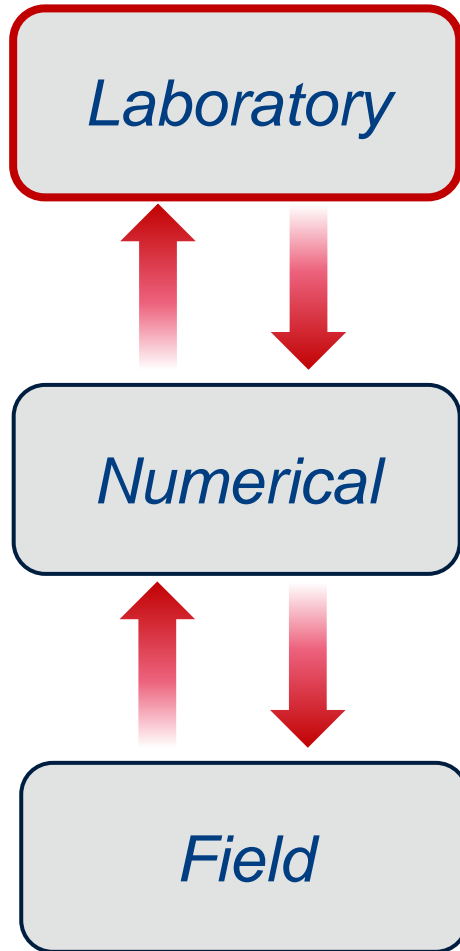


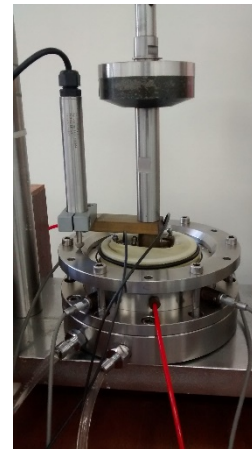
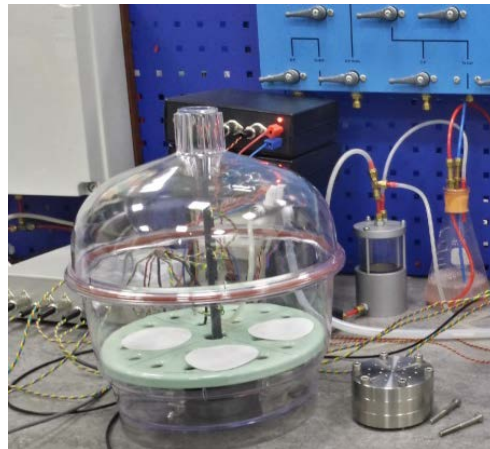
Laboratory and numerical research of bentonite homogenisation at Imperial College London

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Research postgraduate
Imperial College London, UK

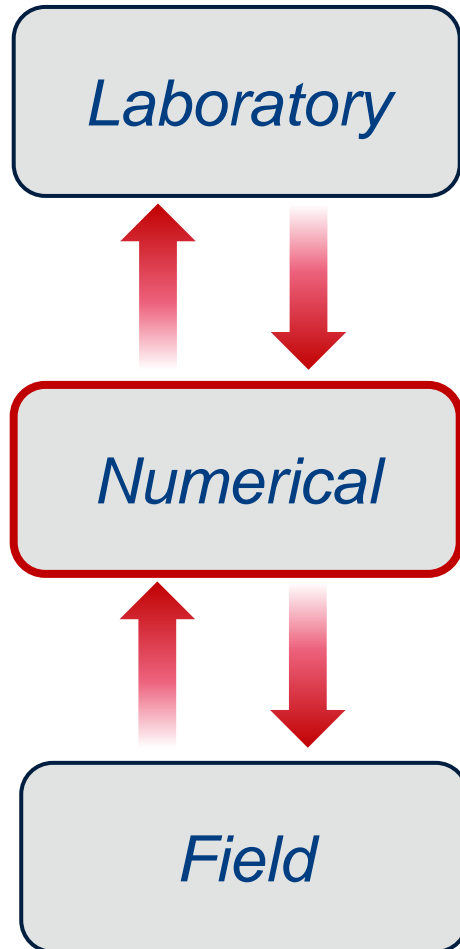
Resources - Experimental



- ❖ *Element testing of wide range of soils, including highly expansive clays*
- ❖ *Relevant equipment with suction & temperature-control (5-85°C):*
 - ✓ *High capacity oedometer*
 - ✓ *Triaxial*
 - ✓ *Automated humidity control system*
 - ✓ *Hydraulic permeability/thermal conductivity cell*

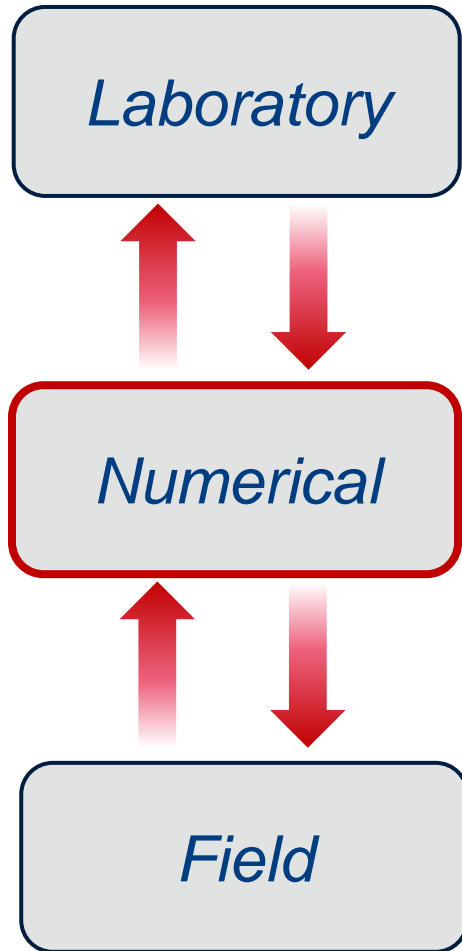


Resources – Numerical

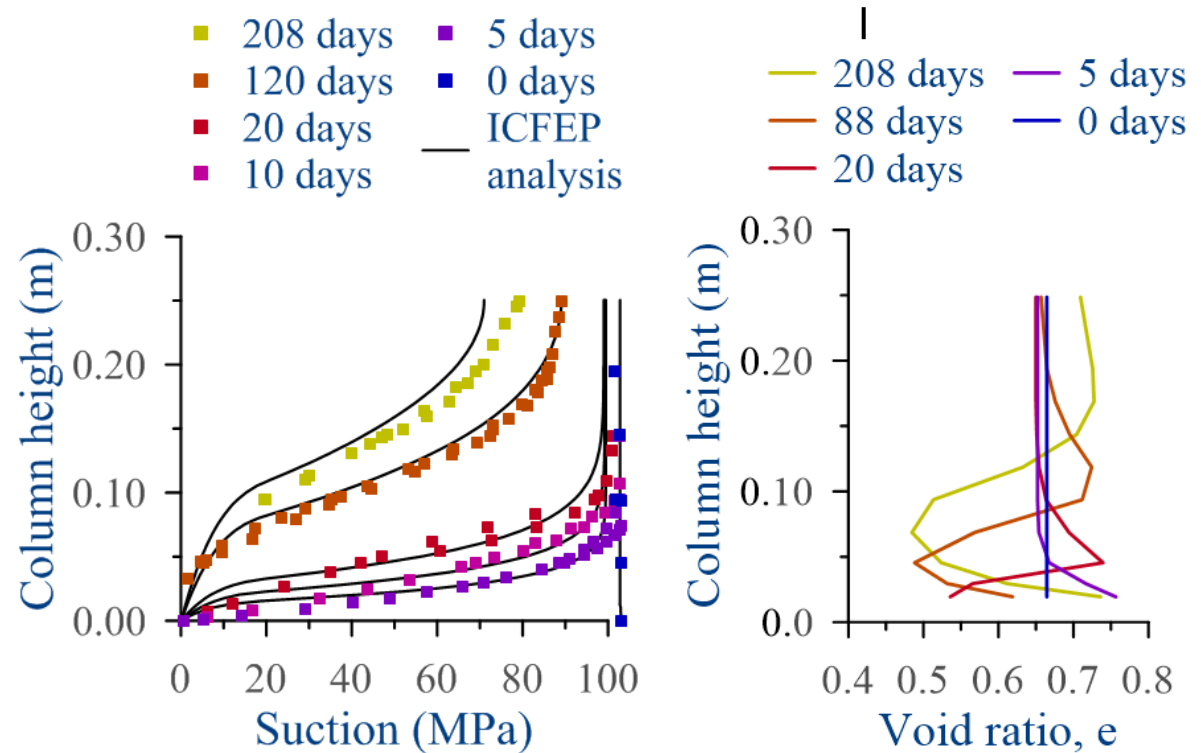


- ❖ *Finite element code ICFEP (Potts & Zdravkovic, 1999) developed over the past 30 years under the leadership of Prof. David Potts*
- ❖ *Fully developed thermo-hydro-mechanical (THM) **Capabilities***
 - ✓ *Constitutive modelling*
 - ✓ *Soil-water retention curve*
 - ✓ *THM coupling*
- ❖ **Applications**
 - ✓ *Large-scale in-situ infiltration test*
 - ✓ *Column infiltration test*

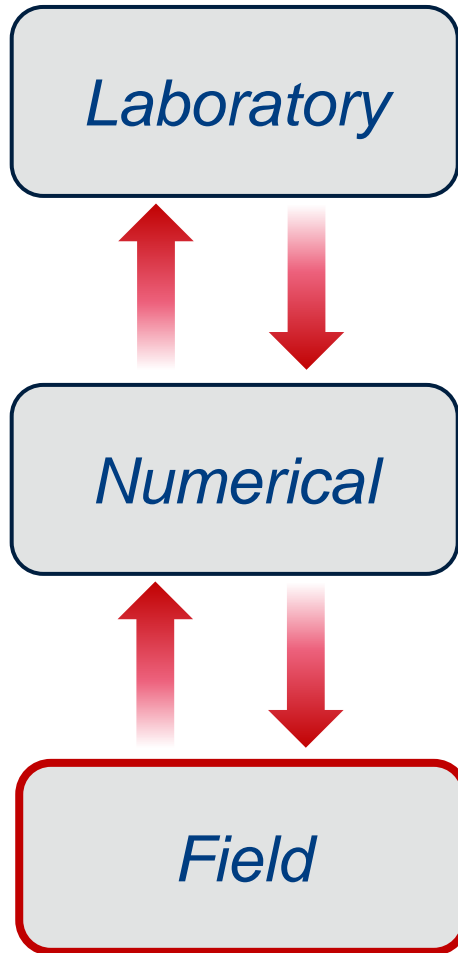
Numerical application



Column infiltration test (Mantikos et. al, 2015)



Resources - Field



❖ **Field monitoring**

- ✓ Instrumentation for +ve pore water pressure monitoring
 - ✓ IC suction probe (0 to 1,000kPa)
-

❖ **Collaboration**

- ✓ Need for field data!

Thank you for your attention

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