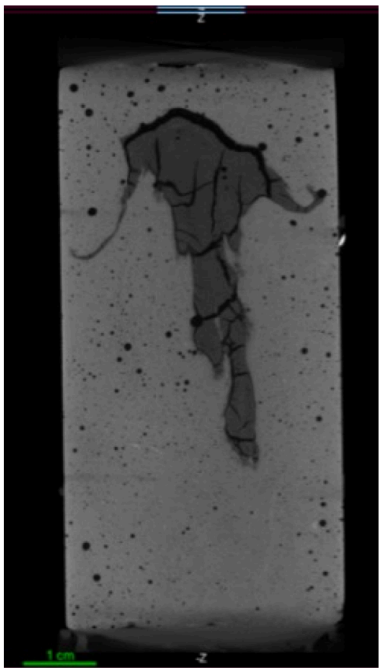
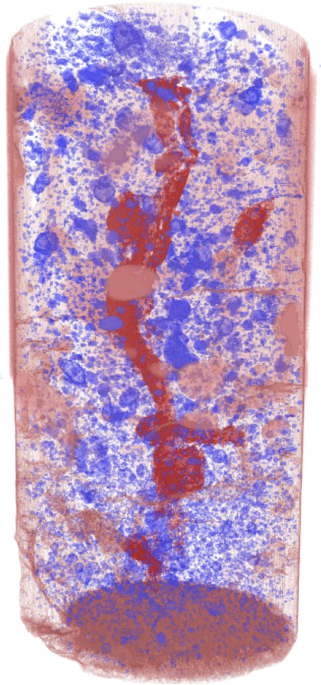
Motivation:

SAND2020-13248C

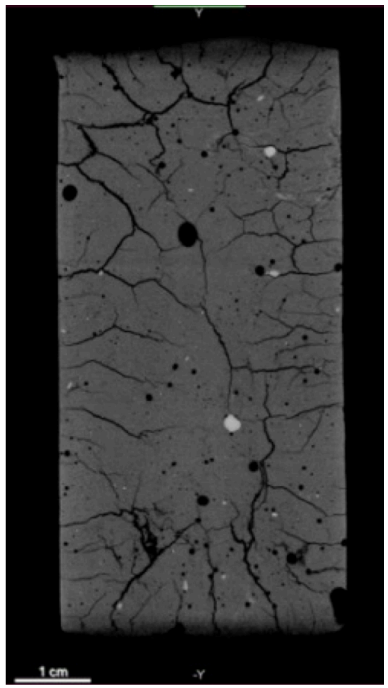
- The heterogeneous nature of clay-cement materials leads to complex characteristics with drastically different properties throughout the material.
- During the drying process of the cement-clay material, complex networks of voids and fractures may form resulting in weakened material.



(a) Single clay mass



(b) Four clay masses



(c) Distributed clay masses

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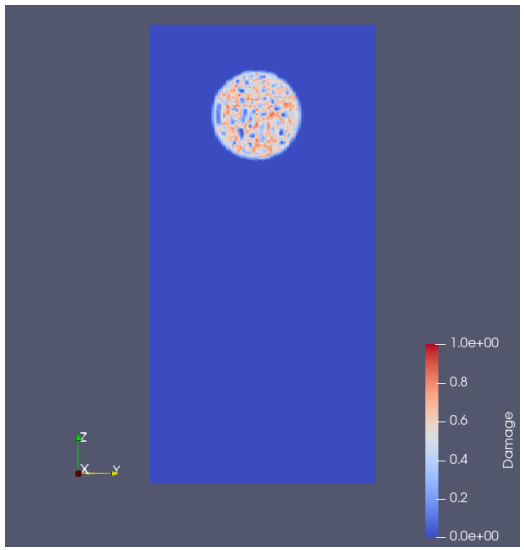
Evaluation of Fracture in Cement-Clay Systems through Application of Non-Local Peridynamics — Presenter: Jeremy Trageser

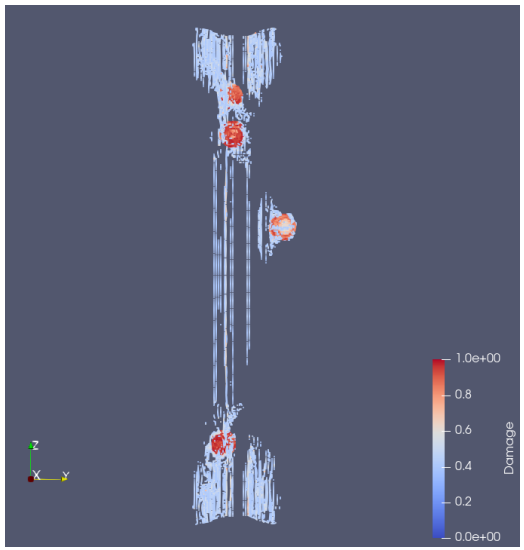
Sandia National Laboratories

Key results:

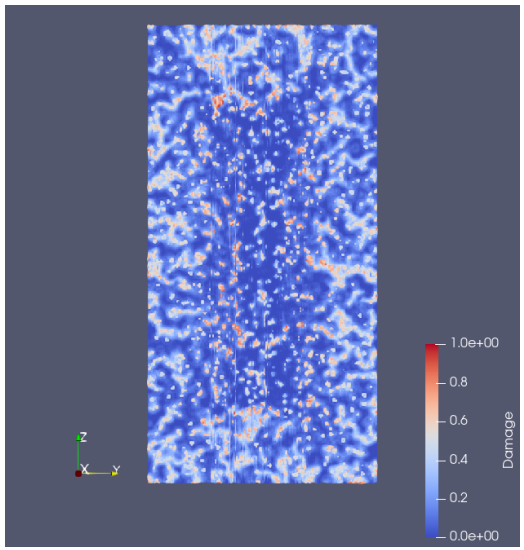
- Developed a nonlocal model describing the drying effects in cement with clay inclusions present.
- Implemented the model into the open-source code Peridigm.
- Compared results with experimental results.



(a) Single clay mass



(b) Four clay masses



(c) Distributed clay masses