Geomechanics Examples

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OpenSees User Workshop, RFS, August 26th 2005

Outline

Single Element Example
- Example Setup
- Material Models

Soil Foundation Structure Interaction Example
- SFSI Model Setup
- SFSI Model Loads

Example Setup

- ▸ Phase 1: hydrostatic compression
- ▸ Phase 2: monotonic loading (triaxial)
- ▸ Phase 3: cyclic loading (triaxial)

Material Models

- ▸ von Mises
- ▸ Drucker Prager
- ▸ Cam Clay
- ▸ Drucker Prager with nonlinear kinematic hardening

SFSI Model Setup

- ▶ Solids for soil
- ▶ Nonlinear beam for pile and structure
- ▶ Connection of solids and structural elements
- ▶ Excavation
- ▶ Boundary conditions

SFSI Model Loads

- ▶ Phase 1: self weight
- ▶ Phase 2: soil excavation (for pile installation)
- ▶ Phase 3: pile and structure construction
- ▶ Phase 4: static pushover
- ▶ Phase 4: dynamic (seismic) shaking