ResearchNote

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Part IV

Proposal

22 Proposal

22.0.1 Soil Choice

- Material model choice
  - Mohr-Coulomb Model
  - Hardening Mohr-Coulomb Model
  - Cyclic SANISAND Model
- Young's modulus and Poisson ratio
- Critical State Properties
- Nonlinear Parameters
- cohesion and tensile properties
- Cycllic strength parameters

22.0.2 Structure Choice

- Rigid or Linear Elastic Material
- Young's modulus and Poisson ratio
- Fatigue properties (SN Curve)
- Hardness properties (BHN)

22.0.3 SSI Choice

- Interface friction coefficient
  - Horizontal / Vertical
- Modulus of subgrade reaction of soil
  - Horizontal / Vertical / Rotational

22.0.4 Loading Choice

- Static Loading [[Pasted image 20230205154905.png]]
- Cyclic Loading [[Pasted image 20230205154927.png]]

[[Pasted image 20230205154840.png]]

- Vibration Loading

22.0.5 Software Choice

- ABAQUS
  - UMAT implementation
- Plaxis 3D
- ARTeMIS Modal Pro
  - Operational Modal Analayis
  - Structural Health Monitoring
- SAP 2000
  - natural frequency for 3D structure on Winkler foundation

22.1 Verification Plan

- Winkler model limitations
- Mass-spring model limitations
- Accelerometer locations
- Sensor Sensitivity and Capacity