

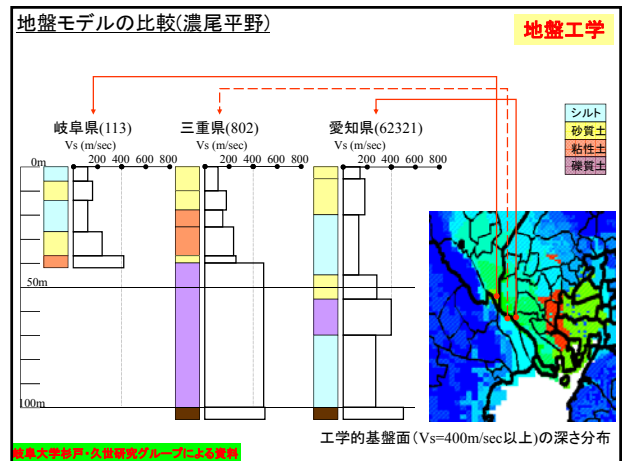
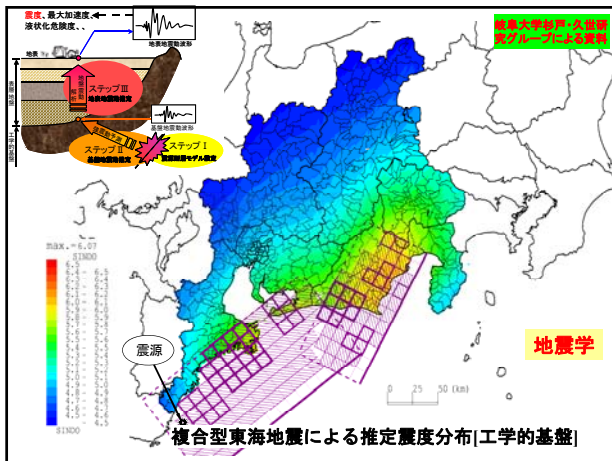
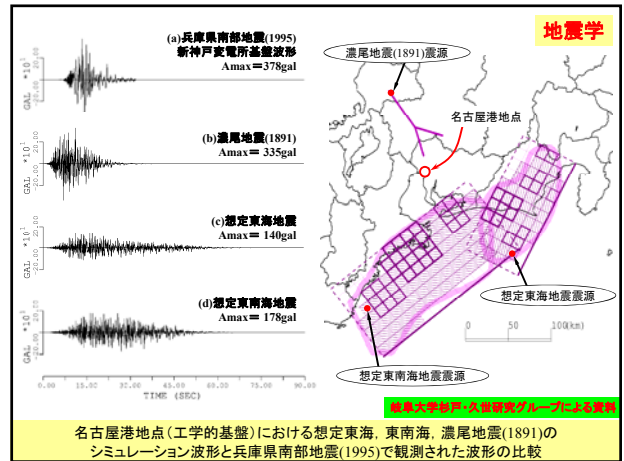
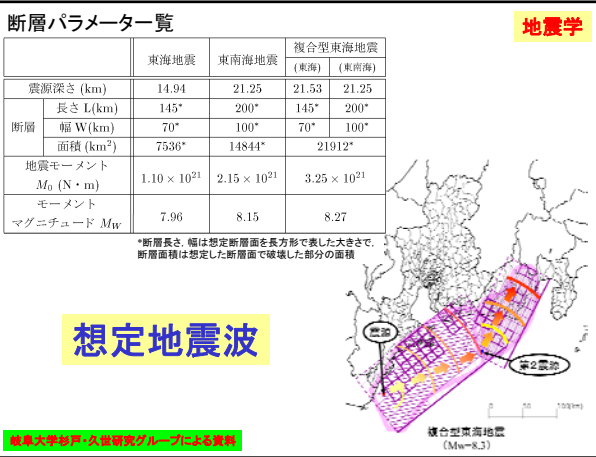
来る地震に備えて

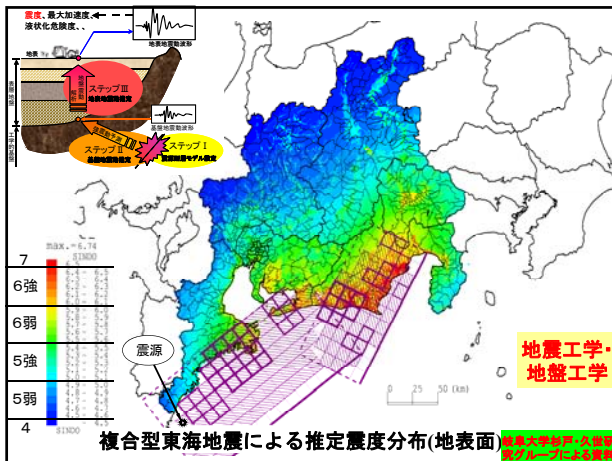
—地盤防災に着目した液状化予測と対策—

創成シミュレーション工学専攻 張 鋒

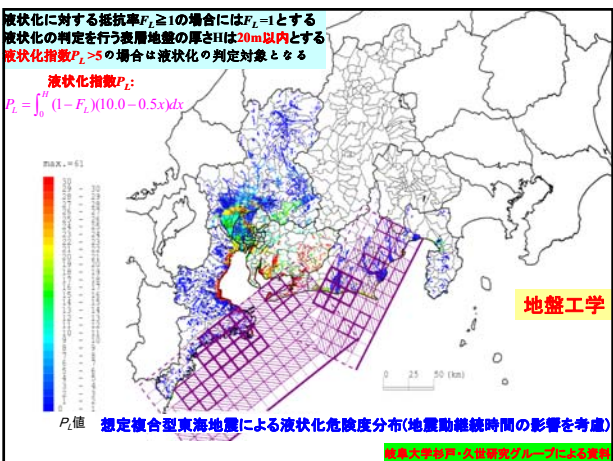
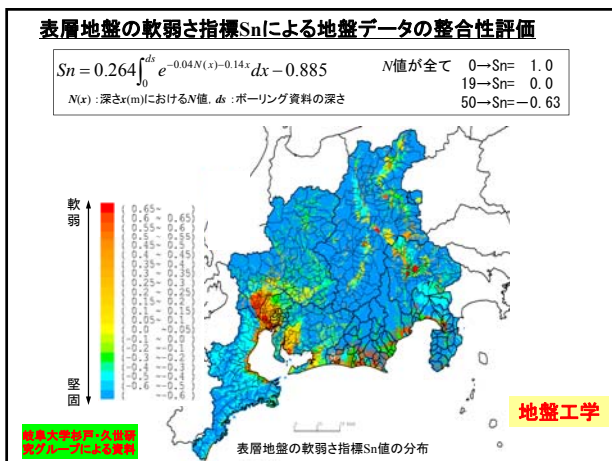
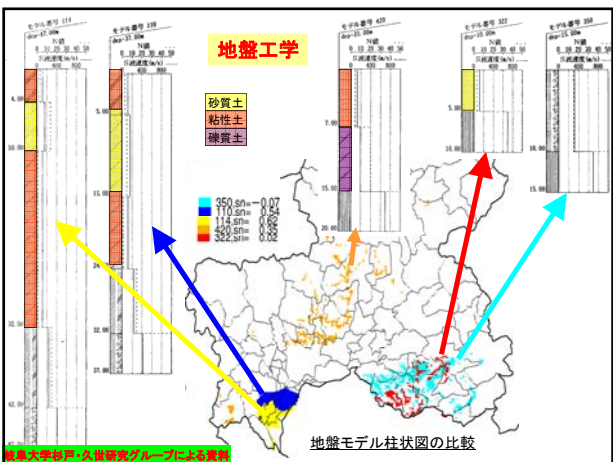
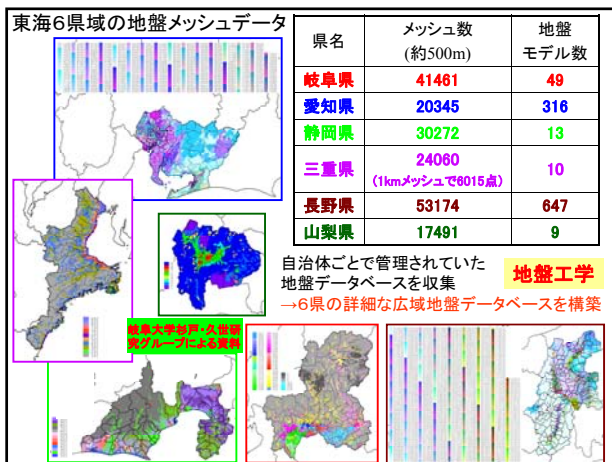
平成23年7月25日

1. 地震動の想定 (地震学)



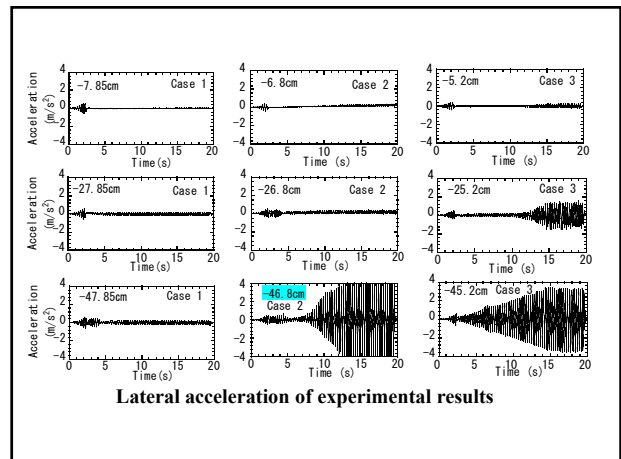
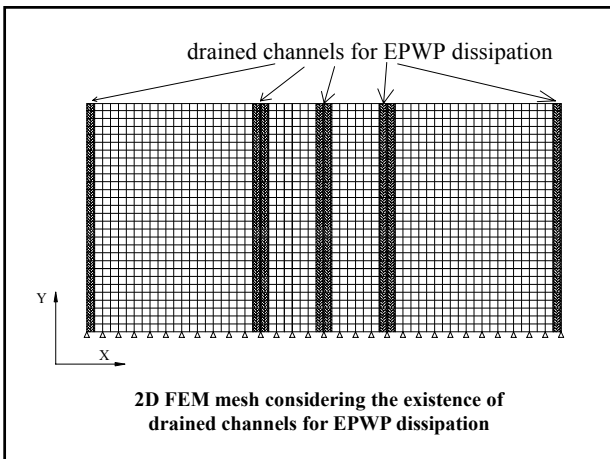
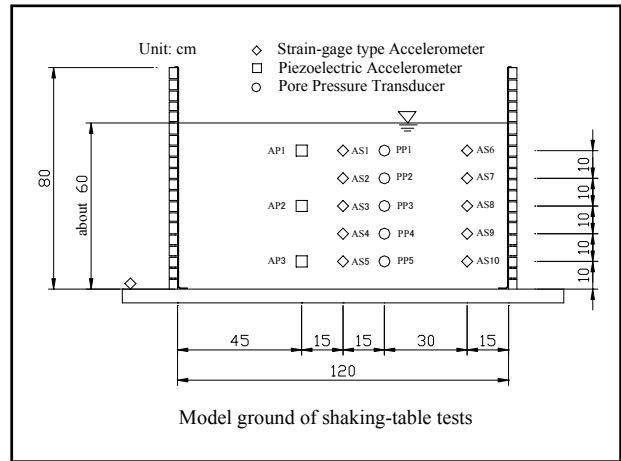
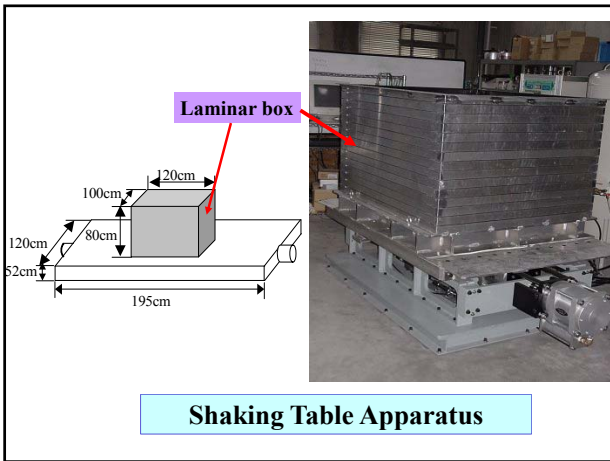


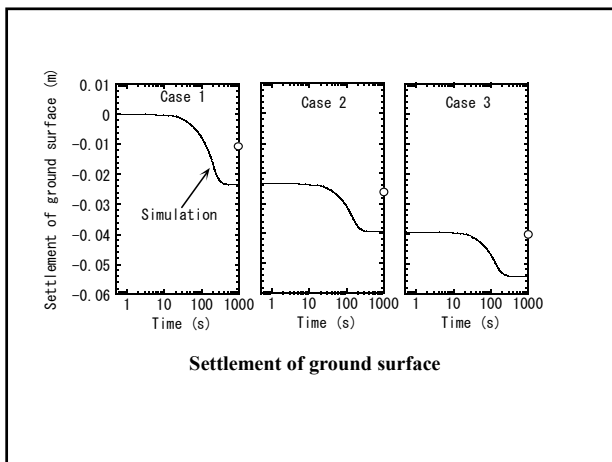
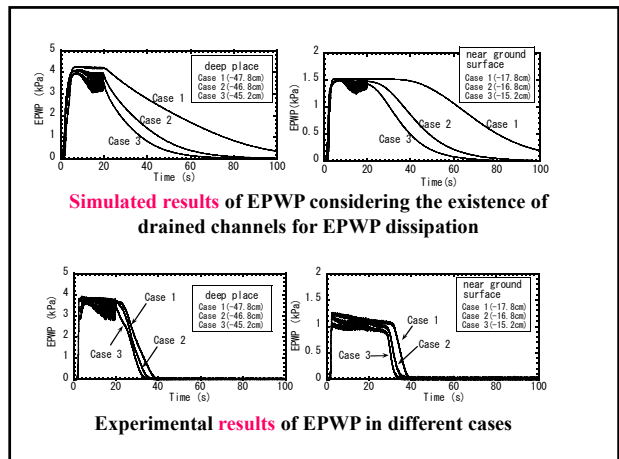
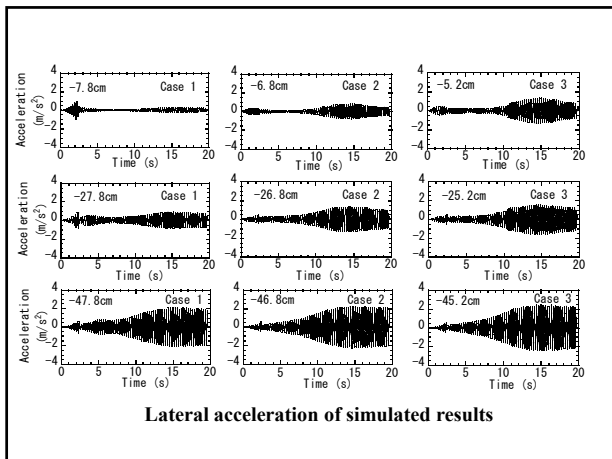
2. 広域被害マップ (地震工学・地盤工学)



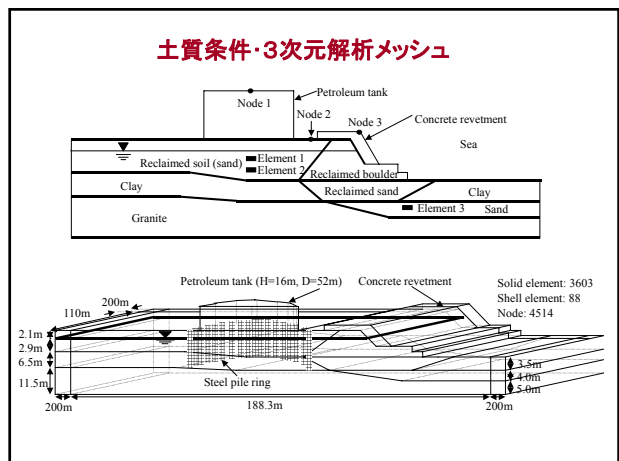
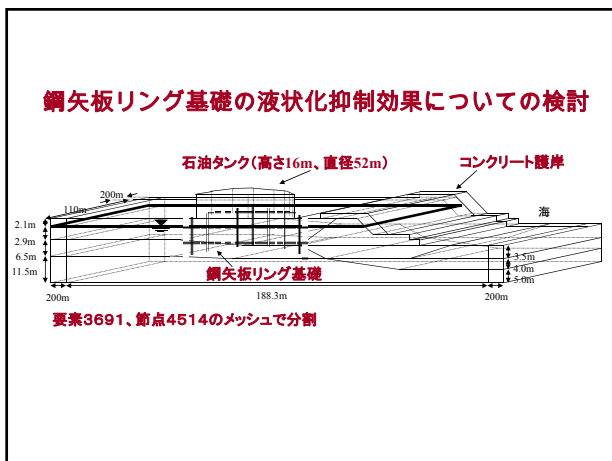
3. ピンポイント被害予測と対策 (地盤工学・耐震工学)

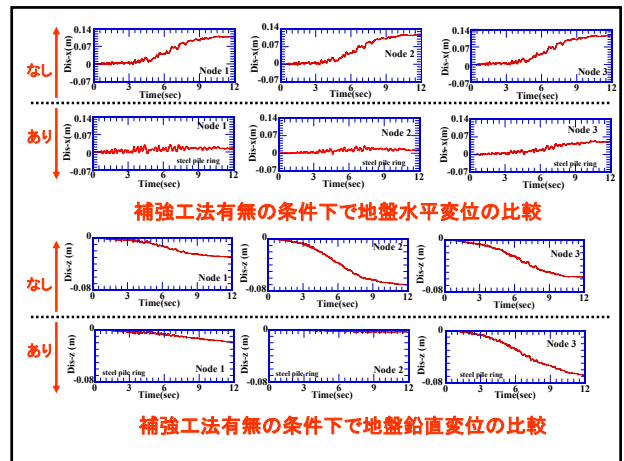
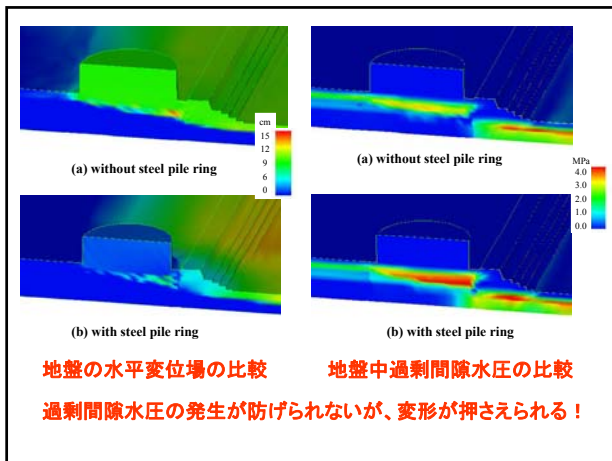
3.1 液状化と圧密沈下の 繰返し過程の数値シミュ レーション (2003)



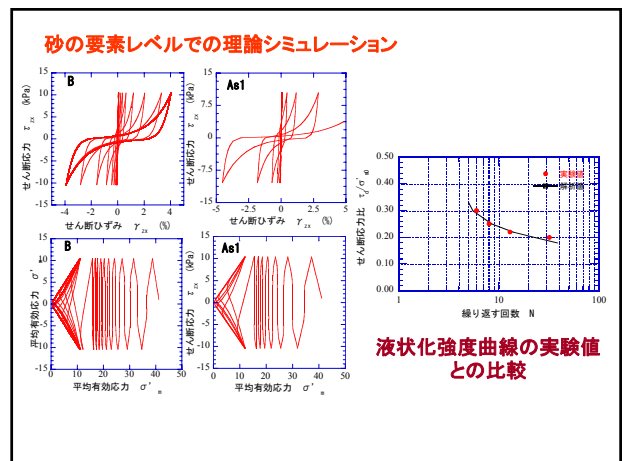
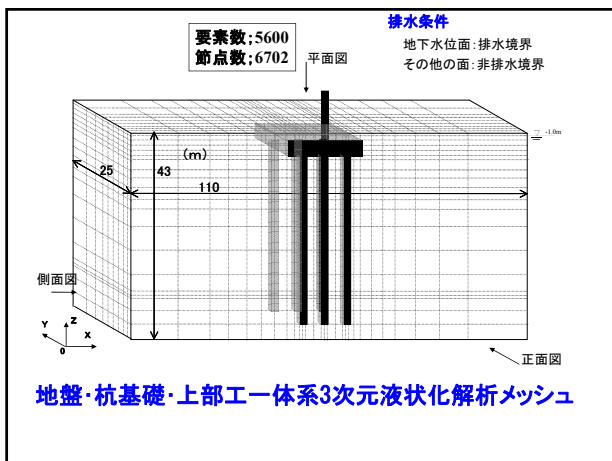
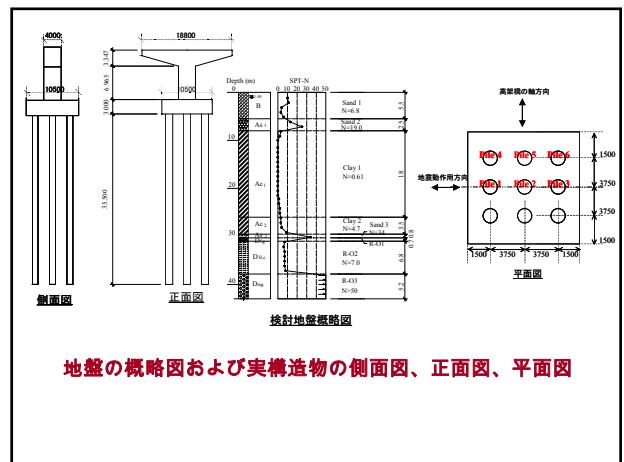


3.2 30,000 kl石油タンク
耐震補強工事の地盤・基礎
一体系3次元液状化解析
(1999)

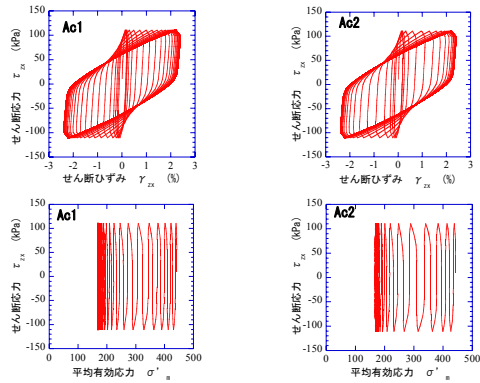




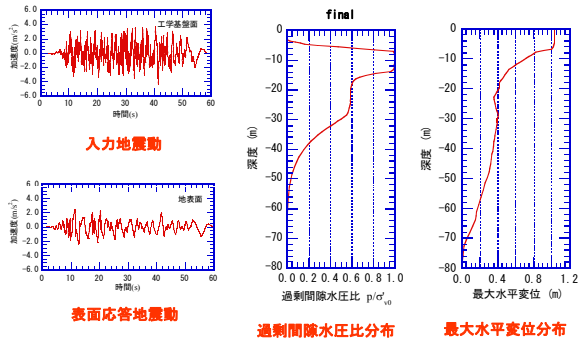
3.3 実構造物の地盤・杭基礎・上部工一体系3次元液状化解析 (2004)



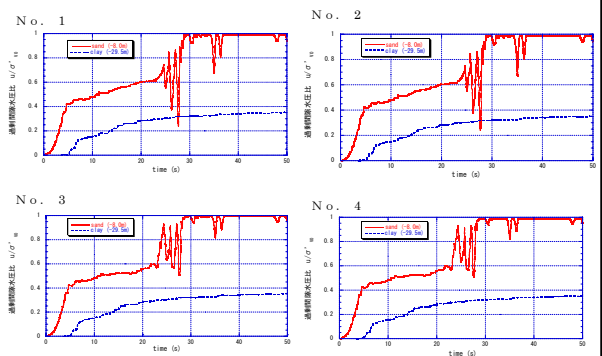
粘土の要素レベルでの理論シミュレーション



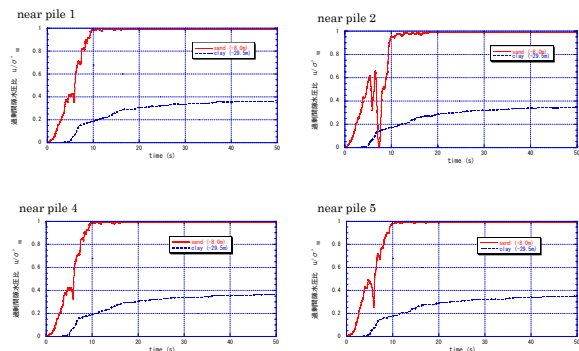
ビデオ動画を鑑賞！



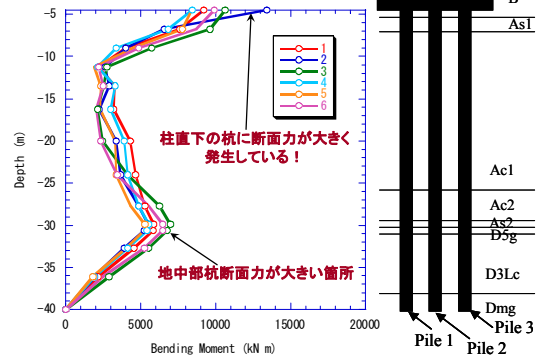
遠方地盤の地震応答



遠方地盤での過剰間隙水圧比の時刻歴



杭近傍地盤に過剰間隙水圧比の時刻歴



各杭の最大曲げモーメントの深度分布

結論

- より精度のいい地震動予測が必要(地震学)
- より詳細な地盤マップの作成が必要(地盤工学) → 地盤データの共有化
- 様々な要求に応えられる液状化被害予測と対策が必要(地盤工学・耐震工学)
- 広域の被害マップとピンポイントの予測の使い分け(地震工学・地盤工学・耐震工学)