靭性杭の開発に関わる実験と建物・地盤連成系解析

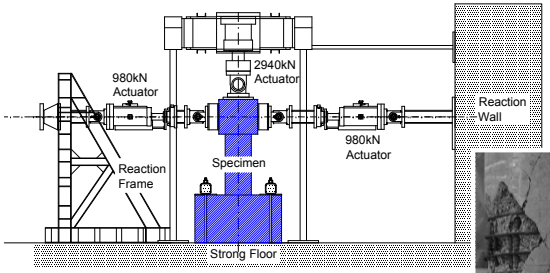
博士論文（東工大）

指導教員：林静雄先生

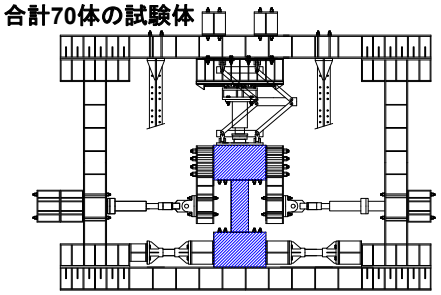
課題　コンクリート系杭の合理的設計法の構築と柔軟基礎の地震応答評価

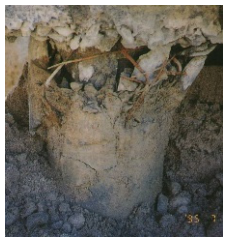
2014.9.1 名大・長江拓也

杭頭破壊の再現実験



合計70体の試験体

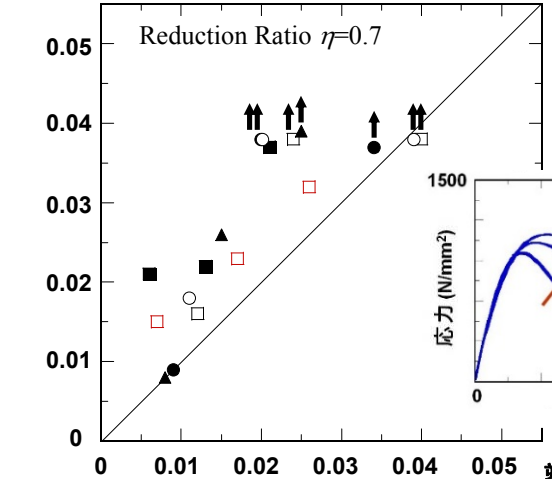


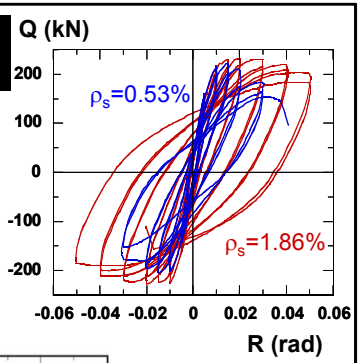


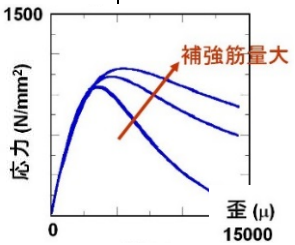
脆性破壊

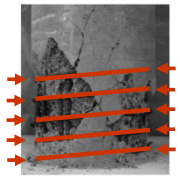
1995年
兵庫県南部地震 ①

曲げに対する変形性能評価





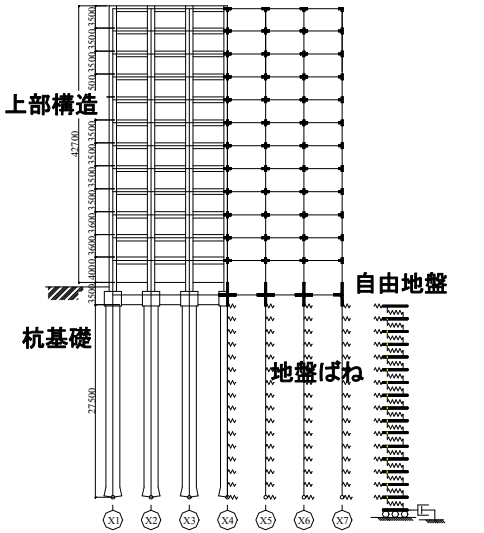




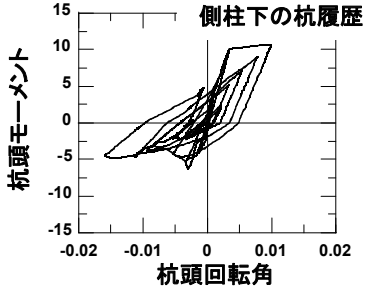
コアコンクリートの拘束効果反映

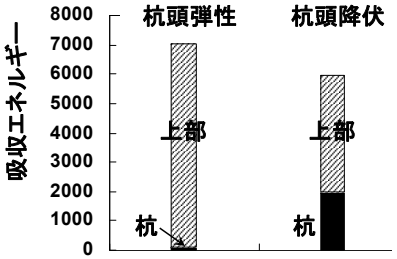
③

靭性杭によるエネルギー吸収比の変化



非線形時刻歴応答解析



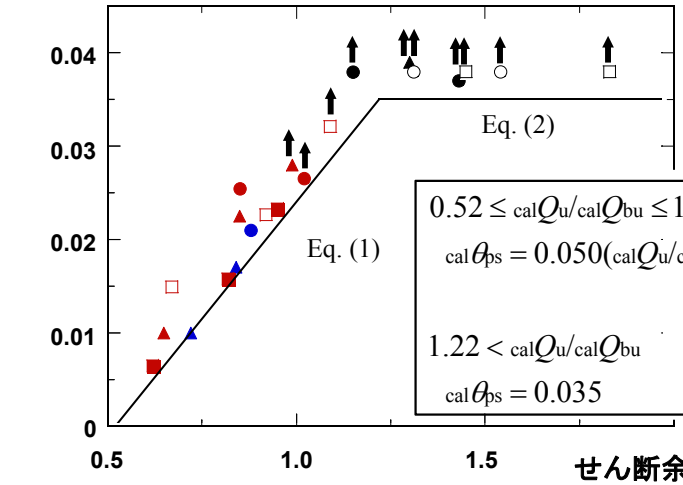


②

せん断に対する変形性能評価

R=0.03 rad
耐力低下なし

R=0.04rad



$$0.52 \le {}_{cal}Q_u / {}_{cal}Q_{bu} \le 1.22 \quad (1)$$

$${}_{cal}\theta_{ps} = 0.050({}_{cal}Q_u / {}_{cal}Q_{bu}) - 0.026$$

$$1.22 < {}_{cal}Q_u / {}_{cal}Q_{bu} \quad (2)$$

$${}_{cal}\theta_{ps} = 0.035$$

④