

Special Guest Lecture by:

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Date: Thursday, October 12, 2006

Time: 11:00 am to 12:00 pm

Location: Mason Building, Room 298

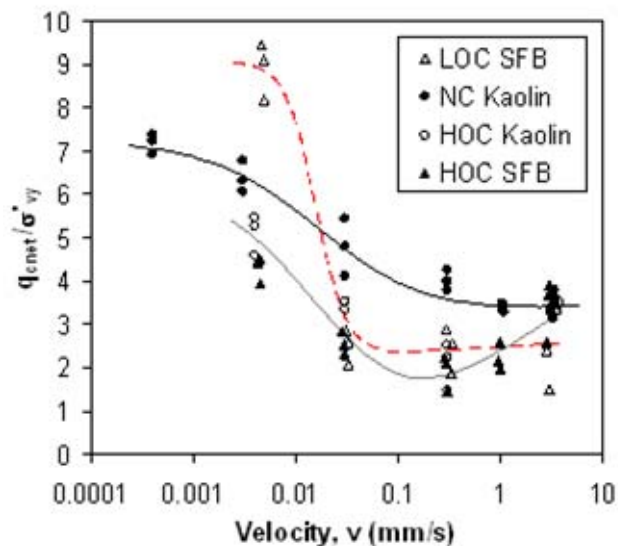
TOPIC

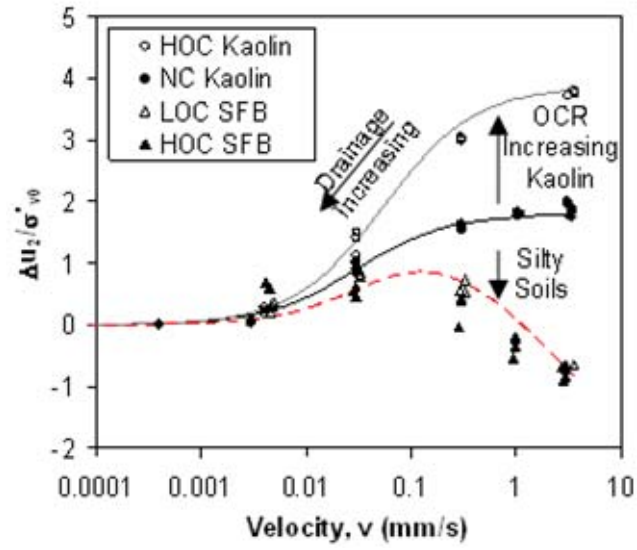
“Effects of Partial Consolidation on Piezocone Response”

ABSTRACT

Evaluation of engineering parameters from a cone penetration test requires knowledge of whether penetration is drained, undrained, or partially consolidated. One of the main advantages of pore pressure measurements during a cone penetration test is for identification of penetration as either drained or undrained. At the standard rate of 20 mm/s, undrained penetration typically results in high penetration pore pressures and relatively low cone tip resistance, while drained penetration typically results in measurement of in situ pore pressures (u_0) and relatively high cone tip resistance. The influence of yield stress ratio (or overconsolidation ratio) in clay soils will typically increase both penetration pore pressures and cone tip resistance normalized to effective vertical stress. This presentation utilizes results from variable rate penetration tests performed in a natural soft clay as well in centrifuge specimens of normally consolidated and overconsolidated clays and silty clays to assess the influence of normalized velocity ($V=vd/c_v$) on:

- Normalized cone tip resistance;
- Normalized excess penetration pore pressures;
- Dissipation of penetration pore pressures; and
- Soil Behaviour Type (SBT) evaluated from Q and B_q .





Influence of penetration velocity on piezocone response in centrifuge kaolin clay and silty clay (SFB)