Society of Physics Students (SPS)
COLLOQUIUM

(Physics, Civil Engineering, and any other interested students and professors are welcome to attend)

The Physics of Dynamic Pile Testing

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Abstract

Many structures are too heavy to be supported by shallow foundations such as slabs or footers, so deep foundations must be used. Piles are long slender members, usually made of steel, concrete, or wood, and are used for deep foundations supports. Most commonly, piles are installed using impact pile driving hammers that force them into the ground to great depths. In the past, visual observations of hammer blow counts and pile penetration under hammer blows were used to evaluate pile installation by utilizing simple two-body impact physics principles. Such evaluation has been found to be insufficient for the accuracy required in modern engineering practice. Currently, dynamic pile testing is used to evaluate the dynamics of pile installation. Dynamic pile testing uses the Case Method, which is based on field electronic measurements of pile force and velocity and the application of theories of elastic one-dimensional stresswave propagation in a uniform, linearly elastic rod with a length much larger than its diameter such as a pile element.

Wednesday, November 30th 2005
1:30pm, SI117

Pizza and soda will be served before the Colloquium