International Workshop on Uncertainties in Nonlinear Soil Properties and their Impact on Modeling Dynamic Soil Response

Richmond Field Station - UC Berkeley

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Questions

1. Shallow soils – Using SHAKE, high amplification ratio is obtained for peak ARS curves, i.e., $Sa_{max}/Sa_0 \simeq 5$ to 7, for shallow soils. These high ratios were not observed from the recorded ground motions on shallow soil sites. Wave reflection trap due to impedance contrast has been attributed for this effect. What is the remedy? Some suggest changing V_s gradually from half space. Are there other solutions?

2. Deep soils – Very small ground motion reaches to the surface for sites with more than about 500' of soil using SHAKE. If V_s of about 2000 fps cannot be reached within 500', what is the mitigation? Shall one play with the damping ratio?

3. Refining soil models by introducing more parameters will increase the uncertainties and may cause instability (high sensitivity) of the output. Where is the cut-off?

4. Can we use a total stress model to analyze a potentially liquefiable site? If the answer is affirmative, then how should one select the soil parameters in liquefiable layers?