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A comparison between Shear Modulus Degradation Curves

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Abstract **–** The aim of this work is to obtain degradation modulus curves and damping ratio soil dynamic parameters of different plasticity index samples using an AR2000 rheometer at controlled strains, and to show the influence of coupling techniques between samples and the equipment. The shear degradation and damping ratio curves will be obtained in a unique soil test, avoiding the need to combine results coming from other kind of soil dynamic tests such as resonant column and torsional shear tests. Results obtained are compared to the ones obtained with traditional dynamic tests of samples consolidated at the same stress value, in order to validate the experimental results. Comparison demonstrated that this technique permit to obtain accurate results in just one test, for high plasticity index soils. However, for low plasticity soils, results showed a great impact that coupling techniques could have.

Keywords: Damping ratio, degradation modulus, rheometer, plasticity index, coupling technique.