
Dynamic behaviour of geomaterials

Ahmed Brara*[†]

¹Centre National d' Etudes et de Recherches Intégrées du Bâtiment (CNERIB) – Cité Nouvelle El Mokrani – Soudania, Alger, W133, Soudania 16097, Algérie, Algeria

Abstract

Understanding the mechanical properties of geomaterials under moderate and high strain rate loading has been and remains of great interest for solving a wide range of dynamic engineering problems. It is worth noting that geomaterials, including natural geological materials (soils, sand and rocks) or engineered materials (mortars and concretes), can be subjected to underground explosion, blast, seismic and railway traffic vibrations etc. As the most materials, granular materials, respond differently under quasi-static and dynamic loadings. Under this type of accidental (or deliberate) actions, the granular materials are subjected to tensile, compressive and shear waves of different amplitudes and durations, leading to complex rate sensitive phenomena (affecting the texture, the structure at different level, the grains and their arrangement or cementation, the porosity, the present moisture etc.) and inducing elastic and inelastic deformations, or even failure.

Various experimental approaches have been developed since almost one century to understand the physical mechanisms governing this behavior by using different apparatus and setups such as hydraulic (or hydropneumatic) presses, resonant columns, bender elements, Hopkinson bar systems etc.

This mini-symposium intends to be a forum bringing together professors, researchers, and scholars working experimentally, developing models and numerical approaches to improve the knowledge in this area.

Keywords: Geomaterials, Mechanical Waves, Dynamics

*Speaker

[†]Corresponding author: ahmedbrara@hotmail.com