Abstract
of "Critical review of the application of seismic-based methods in civil engineering investigations" PhD dissertation

The dissertation presents geotechnical applications of near-surface seismics illustrated by case histories of the author. The position and role of seismic-based tests among geotechnical investigation methods are determined by the strain level and strain rate characteristic to the media in the course of seismic wave propagation.

The essence of the presented critical analysis is to find an appropriate answer; by what means can we transform seismic results from a simple soil layering characterization to a method able to supply in-situ design parameters for civil engineers?

The author proposes methodological procedures for investigating – either solid, non-layered rocks, or very loose inhomogeneous, or other unfavourable media for solving geotechnical problems of constructions at planning, building and working stage – with seismic-based techniques.