Some of the recent seismic events resulted in unexpected damage of structures that satisfied demands of the current codes of practice. That requests a more detailed analysis of seismic loads.

Numerical modeling of seismic wave propagation and interaction of the waves with structures reveals that underestimating the wave nature of seismic load can result in the unforeseen damage of foundation slabs, which are in most cases remain unprotected.

Along with the engineering problems on behavior of structures under action of seismic waves, problems of numerical simulation of seismic sources and the corresponding waves are discussed along with methods of territorial protection from seismic waves.