# SIMULATION OF WAVE RESPONSES FROM FRACTURED GEOLOGICAL FORMATIONS IN SEISMIC EXPLORATION PROBLEMS

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Presently seismic exploration is one of the most reliable methods to prepare the ground for deep drilling. The important problem is development of ways to identify responses from fractures and their formations (clusters) in total wave pattern on seismogram. Because of the complexity and high costs of field experiments numeric simulation can be used to solve this problem.

The report presents the result of simulation with use of grid-characteristic method on triangle (in 2D-case) and tetrahedral (in 3D-case) computational meshes and set of fractures in the domain of integration, that is significant difference from papers [1], [2]. With use of fractured geological medium 2D-model process of wave responses from system of subvertical macrofractures formation was explored and methods to estimate geometric sizes of these systems were obtained (part of results was presented in [3]). The important step in this work is transition from 2D- to 3D-case where the need for more powerful computational systems is arising. The use of 3D-model lets make corrections in earlier results and explore new phenomena in process of wave responses formation, which are unavailable to observe on 2D-model.

## References

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