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Seismic reflection data imaging and interpretation from Braniewo2014 experiment using additional wide-angle refraction and reflection and well-logs data

Maciej Trzeciak (1), Mariusz Majdański (1), Sebastian Białas (1), Edward Gaczyński (1), and Andrzej Maksym (2)

(1) Institute of Geophysics, Polish Academy of Sciences, Warsaw, Poland (mtrzeciak@igf.edu.pl), (2) Polish Oil and Gas Company, Warsaw, Poland (andrzej.maksym@pgnig.pl)

Braniewo2014 reflection and refraction experiment was realized in cooperation between Polish Oil and Gas Company (PGNiG) and the Institute of Geophysics (IGF), Polish Academy of Sciences, near the locality of Braniewo in northern Poland. PGNiG realized a 20-km-long reflection profile, using vibroseis and dynamite shooting; the aim of the reflection survey was to characterise Silurian shale gas reservoir. IGF deployed 59 seismic stations along this profile and registered additional full-spread wide-angle refraction and reflection data, with offsets up to 12 km; maximum offsets from the seismic reflection survey was 3 km. To improve the velocity information two velocity logs from near deep boreholes were used. The main goal of the joint reflection-refraction interpretation was to find relations between velocity field from reflection velocity analysis and refraction tomography, and to build a velocity model which would be consistent for both, reflection and refraction, datasets. In this paper we present imaging results and velocity models from Braniewo2014 experiment and the methodology we used.