**Wide-azimuth seismics: on the one hand, complications of conduction and data processing, and on the other hand, possibility to obtain high-quality images. What problems can be efficiently solved with the use of wide-azimuth seismics?**

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The use of wide-azimuth seismics is efficient in addressing each and all problems. It stands to reason, as we are exploring three-dimensional media, carry out 3D surveys, and hope to obtain high-quality 3D images of the media and estimate variables in parameter space. When media are not so complex, we are interested in more subtle effects, but still we are looking for 3D objects. It's another matter that survey systems are always limited in terms of fold parameters, and azimuth coverage is often achieved at the cost of data deficiency in some directions by means of adding measurements in the other directions. And here we no longer have such a clear answer to a question: "does or does not the data azimuthality add information". It seems that rigorous modelling of wavefield should give an answer to these questions; and it should show the effects caused by the factors that are subject to exploration. There is no such software in the industry yet. It is unlikely that the software for full wavefield modelling available in the industry in the domain of research developments can reach the performance required for commercial use in the nearest future. I think, we need new developments and researches here. Our company is developing software solutions of tensor wave equation for individual waves; and they are ready for commercial use. This can be considered as generalisation of ray-tracing method, and our approach has a number of definite advantages. However, such a method complements grid-based modelling well enough, but doesn't replace it. In out opinion, it is necessary to develop programs that realise the so called hybrid models, where certain part of subsurface is described by thin-layer model, and the rest of subsurface is described by layered model with effective parameters. There are no such programs yet, and this area should be developed. Then it will be possible in the design stage to make decisions on what we can and cannot sacrifice at fixed fold in accordance with geological problem at hand.

It should also be mentioned, that requirement to wide azimuthality of studies is often associated with a need to examine the subsurface anisotropy. It seems that geophysicists have recently started to overuse the concept of anisotropy, and attribute all errors of structural imaging to it. A wide range of azimuths is necessary for correct structural imaging in isotropic media as well; and seismics in unable to separate effects of complex subsurface structure from effects of anisotropy when proper *a priori* information is not available.

Formally, wide azimuth observations allow increasing accuracy of structural imaging; determining fracture trend that is used to explain the nature of horizontal transverse isotropy (HTI); suppressing artefacts and noise caused by insufficient accounting for 3D nature of the objects thereby increasing accuracy of amplitude parameters estimation, and so on. As should be clear from the above, it is true when additional azimuths do not appear in measurements due to decimation of survey grid along the other directions.

It should be added that the problem is not so much in complexity of processing wide azimuth data, but rather that it reveals many of the problems that are not yet solved in seismics and require development of technologies, algorithms, and programs. These problems do not depend on azimuthality, but they become more apparent when we expect more from seismics.