AVO ANALYSIS FOR LONG SOURCE-RECEIVER OFFSETS

Djabbarov MansurGuliyev GatamVeliyev Akhmad

AVO analysis of seismic data is especially effective in the case of using long source-receiver offsets relative to the depth. But the use of the most simple reflectivity decomposition: Rp = I + Gsin2ê leads to great errors in determination of I and G from the panel of common deep point gathers. So, in the case of wide reflection angle (35ø- 40ø) it is better to use more accurate decomposition: Rp = I + Gsin2ê + Usin2êtg2ê.Due to the fact, that we use the least squares method or the modification of robust statistics for I, G, U definition, the independent variable liberty ratio is greater than standard by a unity. This situation puts in more stringent requirements relative to their thorough preliminary treatment and NMO correction, geometrical spreading.The use of defined formula for reflectivity permits us to define more accurately intercept and gradient and give out the third attribute for AVO analysis, that is interpreted as U = (1/2)ÄVp/ Vp , where - ÄVp is the velocity difference, Vp - arithmetic mean value of compressional wave velocity, spreading on the upper and lower layers from the reflecting interface. In this case together with the standard (I, G) crossplotting, additionally we can make crossplotting of the attributes (U,G), which permits us to define lithological changes more accurately. The use of the qualitative database totally proposed by modified methodology permits us to interpret geological data more accurately.