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Modified workflows for picking sweet spots in Duvernay Shale

Ritesh Kumar Sharma and Satinder Chopra
Arcis Seismic Solutions, TGS;

Summary

The Duvernay shale liquids play running along the foothills east of the Rocky Mountains, possesses all the prerequisites of being a successful unconventional play, and has gained the attention of the oil and gas industry in Alberta, Canada. Lying at a depth of 3000-3500m, the Duvernay shale is deep enough for seismic signal to get attenuated. Considering the attenuation of high frequency component of seismic data, it is desirable to balance the frequency content of the seismic data, before any attribute work is carried out. By doing so, it is possible to enhance the vertical resolution of the seismic data which make it possible to identify and characterize the thin Duvernay sweet spots using seismically derived attributes. In our presentation, we will compare different methods for balancing the seismic data. Thereafter, a new workflow that provides higher resolution, is also proposed for inverting pre-stack seismic data. A comparison of proposed workflow with conventional workflow of simultaneous inversion is also illustrated.