Delineasi zona patahan rekahan pada reservoar karbonat lapangan 'falah', cekungan Jawa Timur menggunakan metode dekomposisi spektral berbasis transformasi wavelet kontinyu (CWT) terintegrasi atribut seismik amplitudo RMS dan similarity = Fault fracture zone delineation of carbonate reservoir at 'falah', field East Java basin by using spectral decomposition method based on continuous wavelet transformation (CWT) integrated seismic attributes of RMS amplitude and similarity

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Abstrak

Telah dilakukan analisis metode dekomposisi spektral berbasis transformasi wavelet kontinyu (CWT) terintegrasi atribut seismik Amplitudo RMS dan Similarity dalam mendelineasikan zona patahan-rekahan didukung dengan analisis data sumur dan log FMI (FullboreFormation Micro Imager) dalam menentukan arah patahan-rekahan. Daerah penelitian ini berada pada Lapangan "Falah", Cekungan Jawa Timur dengan formasi Tuban berumur Miosen. Objek penelitian dikategorikan batuan karbonat jenis reef built up dan zona menarik untuk dianalisis pada reservoar karbonat yaitu berupa zona patahan dan rekahan.
Hasilnya metode dekomposisi spekral berbasis CWT dapat memperlihatkan patahan-rekahan pada frekuensi tinggi 40 Hz dan terintegrasi Atribut seismik Amplitudo RMS pada lebar jendela 10 ms dan Similarity pada 25 ms. Patahan-rekahan memiliki arah umum kemiringan sebesar 700 berarah timurlaut-baratdaya. Ketiga atribut yang digunakan pada penelitian ini dapat mendelineasikan arah patahan dan rekahan pada reservoar karbonat reef built up.
<hr>There have been done analysis of spectral decomposition method which was based on Continuous Wavelet Transformation (CWT), integrated Seismic Attributes of RMS amplitude and Similarity. To delineate fault-fracture zone is supported with well data analysis and FMI (FullboreFormation Micro Imager) log is used to define fault-fracture direction. This project research is located at “Falah” field. East Java basin with Tuban formation is in Miocene era. Research object is categorized carbonate rock with reef built up type and the zone is interesting to analyze of carbonate reservoir which are fault and fracture zone. Result of spectral decomposition method which was based on CWT can show fault-fracture in high frequency at 40Hz and integrated seismic attribute of RMS amplitude with window width at 10ms and then similarity at 25ms. Fault-fracture has common dip at 70° of North East – South West direction. Three attributes were used in this research can delineate fault and fracture direction of carbonate reservoir with reef built up type.