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The stress variation along the Nankai Trough observed in the scientific drillings Borehole C0010A and C0004B, NanTroSEIZ

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In NanTroSEZIE Exp. 319, well C0010A was drilled to compare with well C0004B in physical properties, fault zone architecture, and the variations along-strike of Nankai Trough. Based on the seismic reflection data, the character of the mega-spray fault diverges remarkably between C0010A and C0004B. The well conditions of LWD images are collected to 550 meter below sea floor (mbsf). In this paper, we used the stress polygon to analyze the reprocessing LWD images for picking the breakout and tensile fracture azimuth and width in well C0010A and C0004B. The stress state in site C0010A can be modified by the borehole conditions, logging data and the physical properties. The same methods run on the site C0004B and the stable, consistent stress profiles are shown. Several faults were identified by the rotated borehole breakout orientation. The fractures distributions also supported the stress anomaly in the vicinity of the faults. The magnitudes of the horizontal stresses in C0010A vary in the different units comparing to the C0004B. The difference of two sites indicated that the local structure near the Nankai Trough would be the factor to influence the stress state in the boreholes. However, the normal fault stress regime was designed in both boreholes. The low stress level in the shallow portion near the Nakai Trough was obtained in this scientific drilling project.
Keywords: NanTroSEIZE, LWD, Breakout, Tensile fractures, Stress polygon