ICDP DSeis 6: Deformation Rate Analysis of the M5.5 aftershock zone core - stress concentration at reflective intrusives

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ICDP drilling into the aftershock zone of the 2014 M5.5 earthquake near Orkney, South Africa commenced on 2017 and was completed in 2018. Ishida et al. (2018) and Sugimura et al. (2019; ICDP DSeis 5) report on spatial variation of differential stress in a plane perpendicular to the borehole axis. It is ideal to have different stress component especially at critical location where significant characteristics were found. Deformation Rate Analysis (Yamamoto, 2009) can measure stress in any direction although the method takes time and the specimen are not reusable for other test. So, we planned to selected samples where characteristic spatial variation was found by DCDA method (Ishida et al. 2018 and Sugimura et al. 2019). It was confirmed also in normal stress component along the borehole axis that stress was concentrated at the intrusive at about 400m.

This is one of nine ICDP DSeis papers (ICDP DSeis 1-9) presented in JpGU 2019. Refer other papers for other topics on drilling, logging, other stress measurement, fault materials, comparison with calculated stress, legacy 3D seismic reflection data, and relocated aftershocks.

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