# Further validation of the polar-current-shell current algorithm for X-band marine radar

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## Abstract

In this presentation, the performance of the polar-current-shell (PCS) based current inversion algorithm for X-band nautical radar application is evaluated with filed data. The PCS algorithm involves generating a 3-D image spectrum by a 3D-Fast Fourier Transform (FFT) of the radar image sequence, extracting the dispersion shell, converting the dispersion shell to polar form – i.e., to the so-called "polar current shell" – and determining the current velocity from the latter using a robust sinusoidal curve fitting. The algorithm is applied to vertically-polarized radar data that were collected on the FINO3 offshore platform in the North Sea during late July to August, 2014. The radar-derived results are compared with measurements from an acoustic Doppler current profiler (ADCP). The comparison confirms the applicability of the PCS algorithm for current estimation.