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## PLEASE DO NOT TYPE IN THIS AREA

### Variable-depth streamer acquisition: broadband benefits for Rock Property Inversion

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Variable-depth streamer acquisition is a solution for broadband marine seismic where the depth profile of the streamer is optimized in order to create receiver ghost diversity, which in turn enables deconvolution of the residual ghost at the imaging stage, either pre-stack or post-stack. This technique benefits from towing solid streamers at depths of up to 50m, which ensures the raw data has an exceptionally good signal-to-noise ratio, especially at low frequencies.

Seismic data acquired using variable depth streamer acquisition are ideally suited for inversion as they provide additional low frequencies information which allows quantitative estimates of reservoir properties even in the absence of a well log-derived starting model. This allows a more accurate interpretation of elastic properties to predict lithology, helping to de-risk new prospects in frontier areas or improve well planning in producing fields.

In order to investigate the impact on seismic inversion, comparative elastic inversion tests have been conducted using 2-D seismic data from conventional flat streamer and proprietary variable depth streamer acquisitions. In addition, a Bayesian lithology classification workflow has been performed on the inversion results to evaluate the impact on the prediction of lithology and hydrocarbon presence.

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