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(54) Title: FULL WAVEFIELD INVERSION USING TIME VARYING FILTERS

(57) Abstract: An improved method for reducing the accuracy requirements on the starting model when performing multi-scale inversion of seismic data (65) by local objective function optimization (64). The different scales of inversion are brought about by incorporating a low-pass filter into the objective function (61), and then decreasing the amount of high-frequency data that is filtered out from one scale to the next. Moreover, the filter is designed to be time varying, wherein the filter's low-pass cutoff frequency decreases with increasing traveltime of the seismic data being filtered (62). The filter may be designed using Pratt's criterion for eliminating local minima, and performing averages (or other statistical measure) of the period and the traveltime error only with respect to source and receiver location but not traveltime (63).



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