SDCON

SURFACE CONSISTENT DECONVOLUTION

SDCON is a surface consistent deconvolution algorithm. The main features of this program are:

- Optionally calculate and apply multiple components, including line, shot, receiver, cdp, and offset, as well as channel for marine applications.
- Simultaneous median solution.
- Minimum phase, predictive, or mixed phase vibroseis operator calculation.
- Wiener-Levinson or Hilbert algorithms for spectral estimation.
- Time variant capability.
- Time variant spectral balancing to address noise.
- Data can be 2D or 3D, in any sort order.

SDCON is designed to interface smoothly into any of the popular seismic processing systems. On large data sets, collection of spectral information and application of the calculated operators can be broken into multiple job streams to make better use of time or resources. Design windows can be designed within time and offset boundaries in order to select the cleanest data for spectral estimation. The spectra can be amortized at the high or low ends of the signal band or interpolated in the middle bands to avoid problem areas.

SDCON uses true simultaneous median fitting to derive unique spectra for each individual component. The user has control over which components are modelled in the solution, as well as which components are considered when computing the deconvolution operator. An error term is derived for each solved component that can be viewed as a QC for potential problem areas within the dataset.

SDCON derives deconvolution operators from the component spectra using minimum phase, predictive, or mixed phase vibroseis algorithms. The minimum phase and vibroseis solutions can be calculated via either the Wiener-Levinson or Hilbert algorithms. The vibroseis correction can be calculated from input sweep traces, or by user specified sweep parameters.

SDCON can optionally apply a zerophase time variant spectral balancing to the data after deconvolution to address any bandlimited noise which may fall outside of the surface consistent design window. This can be either time variant whitening of the spectrum of each trace, or time variant suppression of anomalously high bands in the spectrum.

SDCON will run on 2D or 3D data, sorted in any order.

For further information, please contact:

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