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compute crosscorrelation

command: CORR <wavelet> <wl-start> <wl-end> <corr-trc>

Computes crosscorrelation of two traces specified by <wavelet> and <corr-trc>. At the trace <wavelet> a time window from <wl-start> to <wl-end> is selected. This wavelet is crosscorrelated with the trace <corr-trc> from <cl-start> sec to <cl-end> sec relative to the selected wavelet window. The correlation length <cl-start>..<cl-end> is selected by the "CORRL" command (default is -30..100 sec). The output trace is positioned at the lower value of the time bound given in the "corr1" command, i.e. after a "CORRL -50 200" instruction the output traces start at time position -50.

There are three different correlation modes available. The correlation mode can be selected by "FCT CORRMODE <mode>". Mode number 1 is default.

mode description (x[i]: samples of <wavelet>, y[j]: samples of <corr-trc>)

```
<mode> = 1:
          sum_{i} (x[i]-x_mean) * (y[i]-y_mean)
cc = -----
          sqrt(sum_{j} (x[j]-x_mean)^2) * sqrt(sum_{k} (y[k]-y_mean)^2)

<mode> = 2:
          sum_{i} (x[i]-x_mean) * (y[i]-y_mean)
cc = -----
          sum_{j} (x[j]-x_mean)^2

<mode> = 3:
          sum_{i} x[i] * y[i]
cc = -----
          sum_{i} (x[i])^2
```

parameters

- <par> *parameter type: type*
explanation
- <wavelet> *parameter type: trace*
Trace of correlation wavelet (see above).
- <wl-start>, <wl-end> *parameter type: real*
Wavelet time window in seconds. This selected time window on trace <wavelet> is crosscorrelated with the <corr-trc> trace.
- <corr-trc> *parameter type: trace*
The correlation wavelet is correlated with this trace.

qualifiers

- /m
The wavelet window is marked.

example

```
corr 1 100.0 110.0 4
```

correlates time window from 100.0 to 110.0 sec of trace 1 with trace 4; the result is appended to the display