

See Also

FindPeak, EstimatePeakSizes

FindPeak**FindPeak** [*flags*] *waveName*

The FindPeak operation searches for a minimum or maximum by analyzing the smoothed first and second derivatives of the named wave. Information about the peak position, amplitude, and width are returned in the output variables.

Flags

Some of the flags have the same meaning as for the FindLevel operation.

/B= <i>box</i>	Sets box size for sliding average.
/I	Modify the search criteria to accommodate impulses (peaks of one sample) by requiring only one value to exceed <i>minLevel</i> . The default criteria requires that two successive values exceed <i>minLevel</i> for a peak to be found (or two successive values be less than the /M level when searching for negative peaks). Impulses can also be found by omitting <i>minLevel</i> , in which case /I is superfluous.
/M= <i>minLevel</i>	Defines minimum level of a peak. /N changes this to maximum level (see Details).
/N	Searches for a negative peak (minimum) rather than a positive peak (maximum).
/P	Location output variables (see Details) are reported in terms of (floating point) point numbers. If /P is omitted, they are reported as X values.
/Q	Doesn't print to history and doesn't abort if no peak is found.
/R=(<i>startX,endX</i>)	Specifies X range and direction for search.
/R=[<i>startP,endP</i>]	Specifies point range and direction for search.

Details

FindPeak sets the following variables:

V_flag	Set only when using the /Q flag. 0: Peak was found. Any nonzero value means the peak was not found.
V_LeadingEdgeLoc	Interpolated location of the peak edge closest to <i>startX</i> or <i>startP</i> . If you use the /P flag, V_LeadingEdgeLoc is a point number rather than to an X value. If the edge was not found, this value is NaN.
V_PeakLoc	Interpolated X value at which the peak was found. If you use the /P flag, FindPeak sets V_PeakLoc to a point number rather than to an X value. Set to NaN if peak wasn't found.
V_PeakVal	The <i>approximate</i> Y value of the found peak. If the peak was not found, this value is NaN (Not a Number).
V_PeakWidth	Interpolated peak width. If you use the /P flag, V_PeakWidth is expressed in point numbers rather than as an X value. V_PeakWidth is never negative. If either peak edge was not found, this value is NaN.
V_TrailingEdgeLoc	Interpolated location of the peak edge closest to <i>endX</i> or <i>endP</i> . If you use the /P flag, V_TrailingEdgeLoc is a point number rather than to an X value. If the edge was not found, this value is NaN.

FindPeak computes the sliding average of the input wave using the BoxSmooth algorithm with the *box* parameter. The peak center is found where the derivative of this smoothed result crosses zero. The peak edges are found where the second derivative of the smoothed result crosses zero. Linear interpolation of