**Flag Value Change  
Adam Kennedy, 2014-09-15  
Function source:** [**https://gce-lter.marsci.uga.edu/public/im/tools/function\_list.htm**](https://gce-lter.marsci.uga.edu/public/im/tools/function_list.htm)

This function returns an index of values above or below the mean of preceeding values by the specified limits (forward-only evaluation, with optional recursive analysis to prevent inappropriate flagging of values adjacent to outliers)

Syntax (directly from GCE function description):

Iflag = flag\_valuechange(vals,lowlimit,highlimit,framesize,iterations)

* inputs:
  + vals = array of values
  + lowlimit = low limit change criteria (flag values < mean-lowlimit) (default = 25% value range)
  + highlimit = high limit change criteria (flag values > mean+highlimit) (default = 25% value range)
  + framesize = number of preceeding values to use for mean calculation (default = 1)
  + iterations = number of flag-check iterations to perform to minimize inappropriate flagging of in-bounds values following out-of-bounds values (default = 1, max = 10; each iteration removes the first flagged value in each repetitively flagged group and re-analyzes the remaining values)
* outputs
  + Iflag = logical index of values outside of the range: mean-lowlimit < value > mean+highlimit
* Implementation
  + 15min
    - flag\_valuechange(x,6.5,6.5,1)='V'
    - flag\_valuechange(x,8,8,1)='I'