Subject: Trouble with TRIANGULATE/TRIGRID.
Posted by Bill Dieckmann on Sun, 03 Oct 1999 07:00:00 GMT
View Forum Message <> Reply to Message

I'm getting unexpected results with triangulate/trigrid when I use non-integer output grid spacing. Well, the situation is a bit more specific than that. Is there anyone comfortable enough with these functions to look and explain this program:? Please reply via email and this newsgroup. Thanks.

```
;
; Exposes trigrid limitation ?
;

PRO trigrid_test

      m = 24      ; Results are sensitive to m,n
      n = 12

      normalized_y  = 1   ; Set to 1 for unexpected output
      extended_grid = 0   ; Set to 0 for unexpected output

      x = findgen(m) # replicate(1,n)
      if normalized_y then begin
         y = ((findgen(n)/n) ## replicate(1,m)) + x/m/n
      endif else begin
         y = ((findgen(n)) ## replicate(1,m)) + x/m
      endelse

      z = fltarr(m,n) + 1.0
      S = size(z)

      window, /free, xsize=1000, ysize=750
      win = !d.window
      plot, x, y, psym = 1

      triangulate, x, y, tr

      for i = 0, n_elements(tr)/3-1 do begin    ; Show the triangles.
         t = [tr[*,i], tr[0,i]]               ; Subscripts of
vertices [0,1,2,0].
         plots, x[t], y[t], color=127         ; Connect triangles.
      endfor
      if normalized_y then begin
         grid_spacing = [1.0, 1.0/S[2]]
         grid_limits = [0.0, 0.0, s[1]-1,
(s[2]-1+extended_grid)/float(s[2])]
      endif else begin
```

```
        grid_spacing = [1.0, 1.0]
        grid_limits = [0.0,0.0, s[1]-1, s[2]-1+extended_grid]
    endelse
    ;
    ; Show the points at which we get strange output samples.
    ;
        oplot, indgen(s[1]), $

 grid_limits[3]-grid_spacing[1]*extended_grid+fltarr(s[1]),ps ym=2

    out = fltarr(s[1],s[2]+extended_grid)
    out[0,0] =reform(trigrid(x, y, reform(z[*,*]), $
                          tr, grid_spacing,
grid_limits,xgrid=xg,ygrid=yg), $
                    s[1], s[2]+extended_grid)
    ;
    ; Show the computed grid intersections.
    ;
        xx = xg # replicate(1,S[2])
        yy = yg ## replicate(1,S[1])
        oplot, [xx],[yy], psym=6
    ;
    ; Print interpolated values of the top most row.
    ;
         print, out(*, n-1) ; Expecting replicate(1.0, m), or maybe
[0, replicate(1.0,m-2), 0].
    stop
    wdelete, win
end
```