Subject: Backlogged question: Drawing vector fields with same scaling in New Graphics
Posted by tianhuachengyue on Tue, 03 Nov 2015 02:02:06 GMT
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This is an unsolved problem about the vector() function in IDL. Gordon used to post this question on the site:
http://compgroups.net/comp.lang.idl-pvwave/drawing-vector-fi elds-with-new-graphics/2090071

But actually it wasn't quite solved:
Is there a way to plot (using New Graphics) two different vector fields on the same set of axes such that the vector fields have the same scaling? Below is a minimal working program. What I want (and sort of expect) is that the v2 vectors be proportionally scaled with respect to the v1 vectors. What I get is that the v2 vectors appear smaller than the v1 vectors, even though they are clearly the same in magnitude.

I followed the suggestions to set v1.length_scale = 2 and
vmag = mean(sqrt(vx^2 + vy^2)),
then set v2.length_scale = 2. / vmag to try to let v2 have the same scale as v1. But clearly it didn't help... Please see my codes below.
Anyone can help me out? Thanks!

```
PRO test_vector

  x = [0.,1.,2.]
  y = [0.,0.,0.]

  vx = [1.,1.,1.]
  vy = [1.,1.,1.]
  vmag = mean(sqrt(vx^2 + vy^2))

  v1 = vector(vx, vy, x, y, $
    XTITLE='X', YTITLE='Y', $
    XRANGE=[-1.,4.], YRANGE=[-1.,4.])
  v1.arrow_thick = 2
  v1.length_scale = 2

  x = [1.,2.]
  y = [1.,1.]
  vx = [-1.0,-1.0]
  vy = [-1.0,-1.0]

  v2 = vector(vx, vy, x, y, $
    /OVERPLOT, XRANGE=[-1.,4.], YRANGE=[-1.,4.])
  v2.arrow_thick = 2
  v2.length_scale = 2. / vmag

END
```