Subject: Re: Colorbar Thinking in the Shower
Posted by Mark Piper on Tue, 13 Sep 2011 20:05:40 GMT
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On 9/13/2011 10:28 AM, David Fanning wrote:
> the problem of displaying
> two data sets, each with a different data range,
> with a single color bar to explain the colors in
> each?

Here's an example of displaying two plots with differing ranges, referenced by a single colorbar. It suffers from the same drawbacks as the other examples I've posted, but maybe it can be a starting point for discussion.

mp

```
pro ng_twoplots_singlecolorbar
   compile_opt idl2

   ; Example functions to plot. The first (f1) has a range of [0,100], the
   ; second (f2) a range of [0,70].
   d = dist(41)
   max1 = 100.0
   max2 = 70.0
   f1 = d / max(d) * max1
   f2 = d / max(d) * max2

   ; Explicitly set 11 contour levels: [0, 10, 20, ... 100].
   n_levels = 11
   levels = findgen(n_levels)/(n_levels-1)*max1

   ; Make a step color table for the first contour plot. The color
table STEP_CT
   ; is a [256,3] array, but there are only n_levels=11 distinct colors (to
   ; check, load & view the color table in XPALETTE). The indices into
the color
   ; tables (both original and step) are contour levels interpolated to
the
   ; range of color table indices (i.e., the byte range).
   ct_number = 4
   ct_indices = bytscl(levels)
   loadct, ct_number, rgb_table=ct, /silent
   step_ct = congrid(ct[ct_indices, *], 256, 3)

   ; Display the first function using the step color table and the
   ; interpolated indices.
```

```
    c1 = contour(f1, $
      layout=[2,1,1], $
      c_value=levels, $
      rgb_table=step_ct, $
      rgb_indices=ct_indices, $
      /fill, $
      title='Max = ' + strtrim(max1,2), $
      window_title='Discrete Colorbar Example')

    ; Display the second function using the original color table and the
    ; interpolated indices.
    c2 = contour(f2, $
      layout=[2,1,2], $
      /current, $
      c_value=levels, $
      rgb_table=ct_number, $ ; compare with c1
      rgb_indices=ct_indices, $
      /fill, $
      title='Max = ' + strtrim(max2,2))

    ; Display colorbar with first contour plot as a target. It needs
n_levels + 1
    ; ticks to make labels line up correctly.
    tick_labels = [strtrim(fix(levels), 2), ''] ; append empty string
    cb = colorbar( $
      target=c1, $
      ticklen=0, $
      major=n_levels+1, $
      tickname=tick_labels, $
      font_size=8, $
      position=[0.2, 0.06, 0.8, 0.09])
end
```