Subject: Re: Colour maps overlaid on grey-scale (medical) images
Posted by steinhh on Sun, 14 Mar 1999 08:00:00 GMT
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> Is it possible to overlay a colour map onto a grey-scale image
> without obliterating information in the grey-scale image ? ie: by making
> the colour overlay "transparent" to some degree ?

The way I understand your question, you want to blend together
two images containing different types of information.

I believe the easiest way to do this is by working in RGB "space"
to blend the two images together into one image and then display
the composite image.

If you normally use colour tables, one simpleminded approach
would be the following (assuming image1 and image2 are of equal
size, and scaled to byte values match the available number of
colours):

```
; load/modify your grayscale colour table "as usual"
:
; Now, to read this colour table:
tvlct,r,g,b,/get

; Form an RGB image from the byte-scaled image1
im1rgb = [[[r[image1]]],[[g[image1]]],[[b[image1]]]]

; Load/modify your "hot body colour scale"
:
; Then we read it:
tvlct,r,g,b,/get

; Form RGB image from image2
im2rgb = [[[r[image2]]],[[g[image2]]],[[b[image2]]]]

; Take the average of the two images (avoid byte overflow!)

im = byte((fix(im1rgb) + fix(im2rgb))/2)

; Now the trick: Use color_quan to quantize the existing
; colors into one color table:
im_out = COLOR_QUAN(im, 3, red, green, blue)

; Now, load the appropriate color table and display image.
tvlct,red,green,blue
tv,im_out
```

A better/more flexible approach would be to make some kind of direct color coding formula based on the actual data to be shown, i.e:

```
red_image = func_red(bloodflow,brain_image)
grn_image = func_green(bloodflow,brain_image)
blu_image = func_blue(bloodflow,brain_image)

;; Then:

im = color_quan(red_image,grn_image,blu_image,r,g,b)
tvlct,r,g,b
tv,im
```

But be warned: Finding good formulas for the final RGB color based on the input bloodflow/brain_image data can be quite a challenge!

Best of luck.

Stein Vidar
