Subject: Re: Color table questions
Posted by Michael Wallace on Fri, 20 Feb 2004 19:24:17 GMT
View Forum Message <> Reply to Message

Haje Korth wrote:
> Mike,
> You should toss that rainbow colorbar if you do science. This color bar is
> highly non-linear to the human eye and you tend to emphasize features that a
> completely non-physical, but rather due to changes in the gradient of the
> color bar it self. I did actually some research on that a while ago. I found
> one article that illustrates the topic well:
>
> B. E. Rogowitz and L. A. Treinish, How to NOT lie with visualisation,
> Computers in Physics, vol10, no 3, 1996. (Make sure you get a color copy,
> otherwise you will not be able to verify what the authors are talking
> about.)
>
> The topic says it all: Pretty pictures alone do not guarantee good science!
> I am not trying to be arogant (not my nature), this is just a simple
> statement that I had to find out the hard way myself.

Yes! That's exactly why I want to toss out the rainbow color bar -- because it is very non-linear to the human eye. So, simply put, I'd like a colorbar that is linear (or as close as reasonable) to the human eye but still includes several distinct colors. I only mentioned the rainbow color bar because it includes several colors which flow together nicely. What it doesn't have is linear spacing between colors.

I'm asking the question because, other than simple gradients, I haven't completely figured out how to make not only a good looking colorbar, but one that's also linear. I would have thought that someone else out there might also want to do this...

As for the article you mention, that should be on the reading list of anyone who does science data analysis with colors. Here's an on-line version:
http://www.research.ibm.com/dx/proceedings/pravda/truevis.ht m

Mike