
Subject: Re: Postscript Color RGB to CMYK
Posted by [George White](#) on Thu, 03 Jul 2003 11:16:56 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Tue, 1 Jul 2003, Esa Riihonen wrote:

> Hi all!
>
> I wonder whether someone might have bumped on this problem before and
> even perhaps have somekind of solution.
>
> As I understand, Postscript files produced by IDL have color coded as
> RGB. However several (propably most) journals require CMYK-code. I have
> a clumsy solution, load the file in CorelDraw and make the changes there
> - this is far from perfect as it among other things usually require many
> trials e.g., going back to IDL for changing the line thicknesses and such.
>
> So has anyone a better solution?

I find Adobe tools (Illustrator and Photoshop) do a better job of the RGB->CMYK conversion. I've tried doing conversions using the textbook formulas, but often the colors come out looking "muddy" and don't come out as well in print. I suspect the problem is that many of our images use colors that are outside the printer gamut. The same RGB LUT will produce different images on different CRT's (e.g., PC vs Mac or SGI due to the different gamma values used on these systems). See, e.g., <http://www.fcaglp.unlp.edu.ar/~esuarz/gmt/1998/0651.html> for more on this issue.

In principle, using a PS interpreter such as ghostscript you can rewrite a PS file to replace RGB colors with CMYK. Jason Olszewski's aimaker script does a number of color manipulations (using awk scripts) after converting the PS file to AI format (so the operators have a consistent form), but doesn't deal with images.

There are other issues in creating pre-press files (color separation, trapping, gamut mapping). The IDL display devices are RGB, and doing CMYK properly seems to require more than just the textbook formula. We often create reports with images processed using multiple tools (IDL, GMT, matlab). All of these support RGB LUT's so you can preserve consistent color scales across the packages. These LUT's are tuned for CRT's, and have become the "norm" for viewing certain data sets.

RGB to CMYK conversion seems to be a "hard" problem. Does it make sense to try to solve this in IDL or is it better to look for a more universal tool that will give consistent results for PS from multiple sources?

--

George White <aa056@chebucto.ns.ca>
Head of St. Margarets Bay, Nova Scotia
