

Re: RGB conversion to 8 bit gray scale

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- *From:* "edward.s.meinel@xxxxxxxx" <meinel@xxxxxxxx>
 - *Date:* 26 Sep 2005 08:10:35 -0700
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sean_incali wrote:

- > IMAGEJ doc's says...
- >
- > RGB images are converted to grayscale using the formula
- > $\text{gray} = 0.299\text{red} + 0.587\text{green} + 0.114\text{blue}$ or the formula
- > $\text{gray} = (\text{red} + \text{green} + \text{blue}) / 3$
- > if "Unweighted RGB to Grayscale Conversion" is checked in
- > Edit/Options/Conversions (ImageJ 1.32g or later).
- >
- >
- > I think This isn't limited to IMAGEJ but to imagin processing in
- > gfeneral? what is the reason for the weighted vs unweighted conversion?

The general formula is

$$\text{gray} = R * \text{red} + G * \text{green} + B * \text{blue}$$

where

$$R + G + B = 1$$

All conversions are weighted. If you want UNIFORM weights, then $R=G=B=1/3$.

- > Let's say you have a TIFF of RGB intensities (but Red channel is
- > empty), and you want to convert it to 8bit grayscale images.

Then $R=0, G+B=1$.

- > would you hav to rolling ball bacground subtract the RGB image then
- > split them using one of the conversion method?
- >
- > or do you split them using one of the conversion methods and then
- > background subtract using rolling ball?

What do you mean by "split"? Did you really mean "combine"?

Ed

- **References:**

- ◆ **[RGB conversion to 8 bit gray scale](#)**

- ◇ *From: sean_incali*

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