



Consistency of Color Appearance within a Single Reproduction Medium

(NTNU Summary Slides for the CIE Division 8 F2F Meeting at Vancouver)

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Project Summary:

- A perceptual study is underway to evaluate consistency of color appearance based on subjective color difference.
- The aim of the CIE TC8-16 is to drive a metric considering all aspects that affect consistency of color appearance, and color rendering (mainly focused in this study) is one of them.
- Consistency of color appearance was evaluated in terms of color difference.



Experiment Summary:

Six source images and three different print media were selected from the CIE TC8-16 recommended stimuli and candidate profiles, respectively. The images were rendered in CIELAB space and remapped to the given gamut.

Three different print media were simulated on a calibrated display and magnitude estimation method was used to scale image color difference relative to the consistency of appearance across given set of images.

Final step is to analyze the visual data and correlate with different color difference formulae and recommend the best manipulation method for consistent color appearance.



Test Images:



(a)



(b)



(c)



(d)



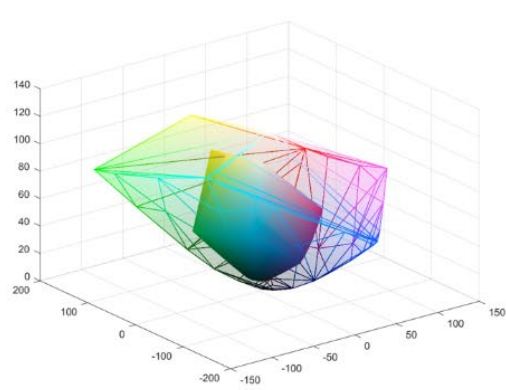
(e)



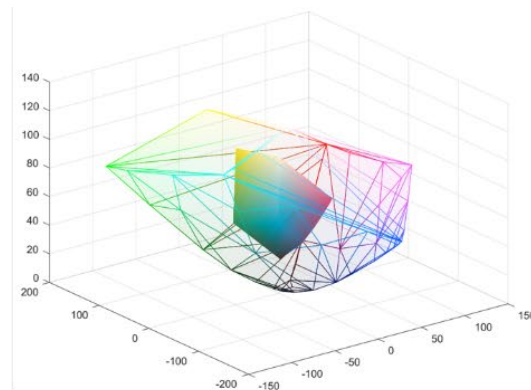
(f)



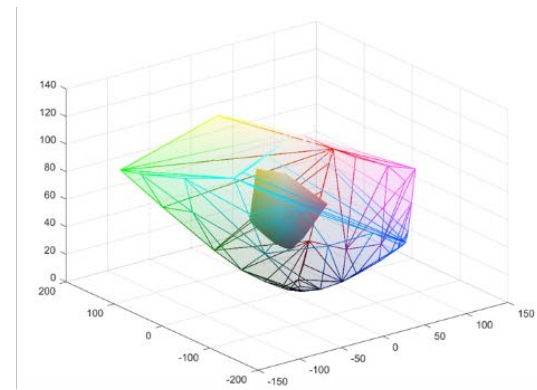
Test Print Gamuts:



(a)



(b)

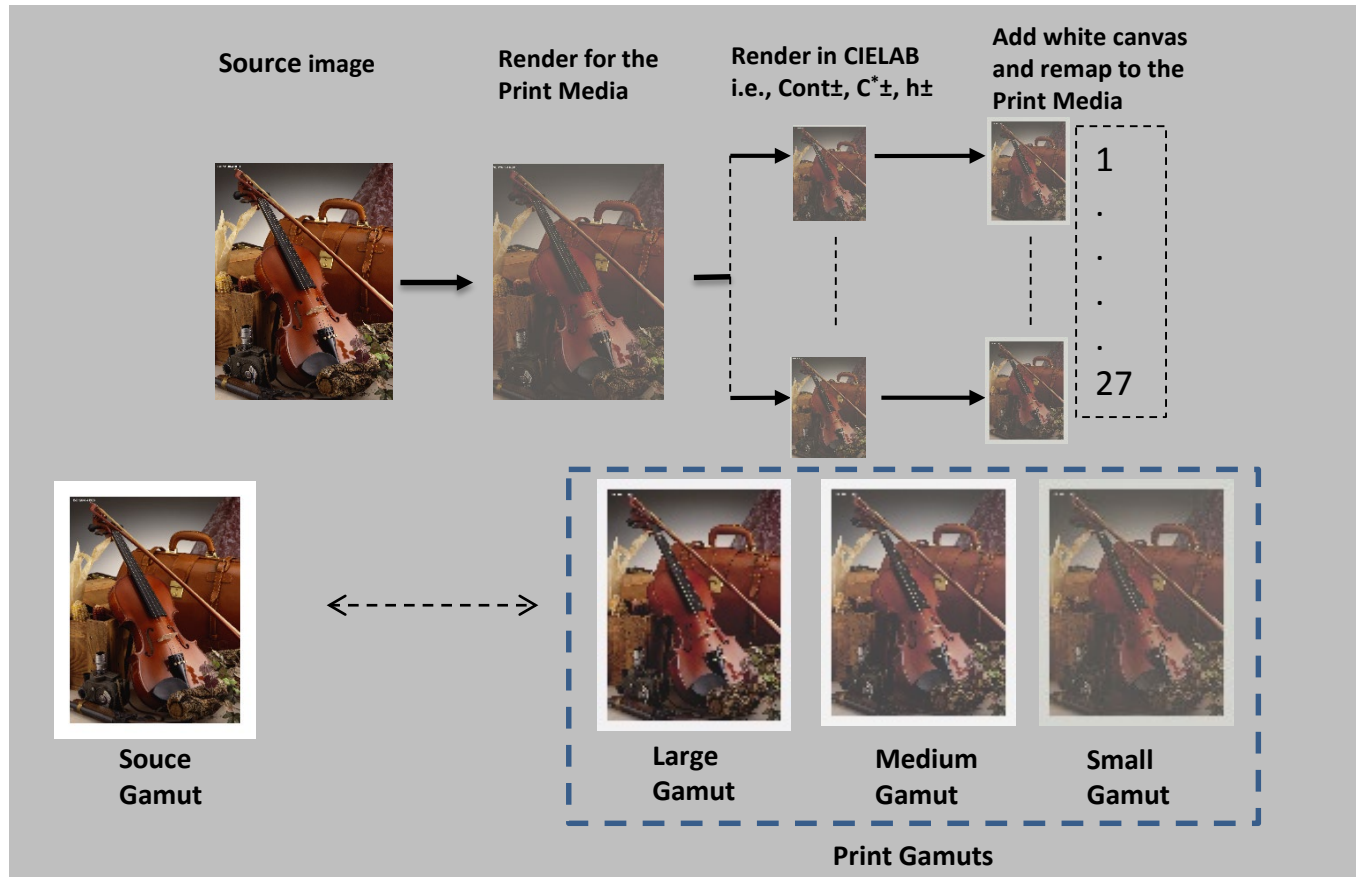


(c)

Selected print gamuts are plotted along with display gamut in the CIELAB space. The display gamut is shown as wireframe. Solid volumes represent: (a) the FOGRA39 gamut, (b) the SC Paper gamut and (c) the CRPC1 gamut.



Image Calculation:





Experiment:

0-10

3



Prev

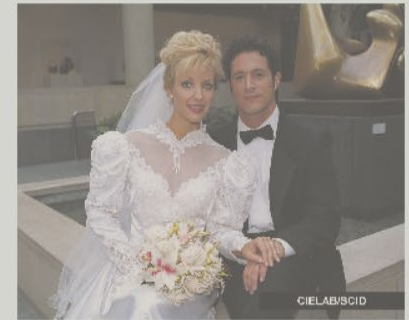
Next



Experiment:

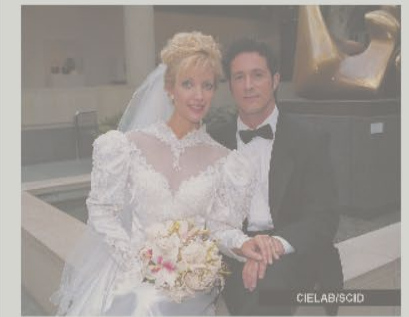
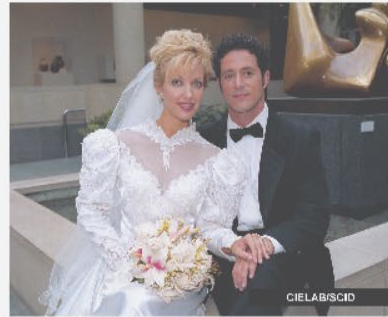
0-10

3



0-10

2



Prev

Next

Activate Windows
Go to Settings to activate Windows.



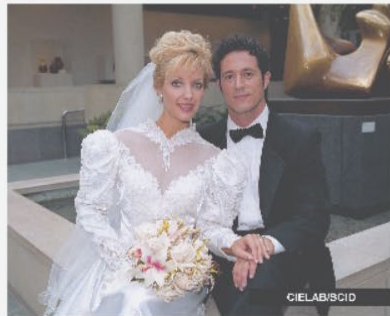
Experiment:

0-10

2



0-10



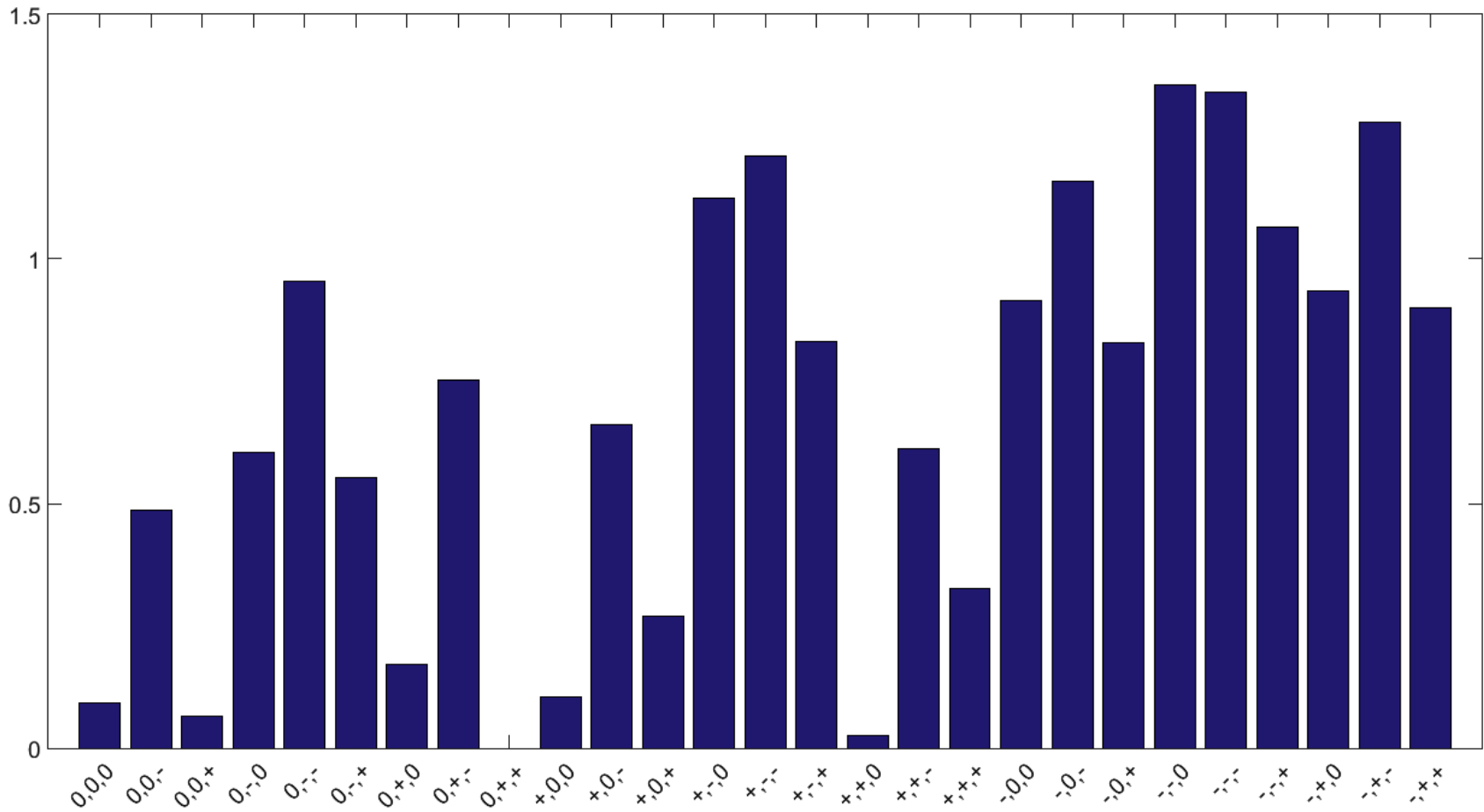
Prev

Next

Activate Windows
Go to Settings to activate Windows.



Visual Data:



No change in contrast, Chroma increased, hue increased



Next Step:

Next step is correlate visual results with prediction of different metrics.



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Thank you!