

Supplementary material - Errors and corrections in Section 10.6 of IDMS 2022

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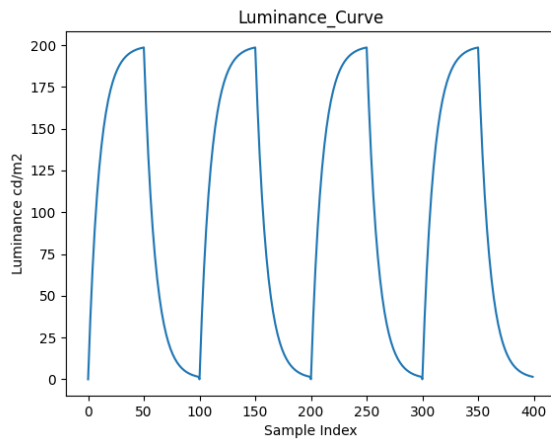


Figure 1. Reproduced luminance-sample point curve.

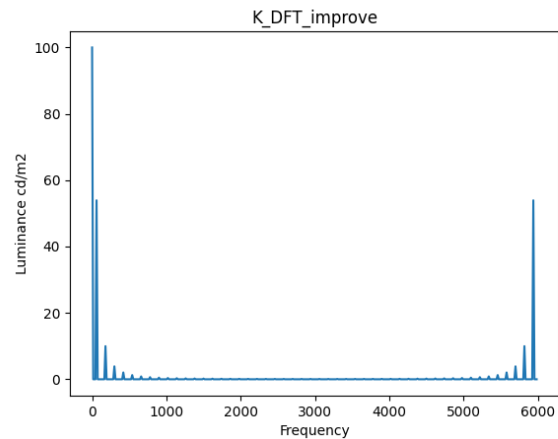


Figure 3. Perform DFT on the original data, note that the improved method is used here, *i.e.*, divided by the number of sampling points.

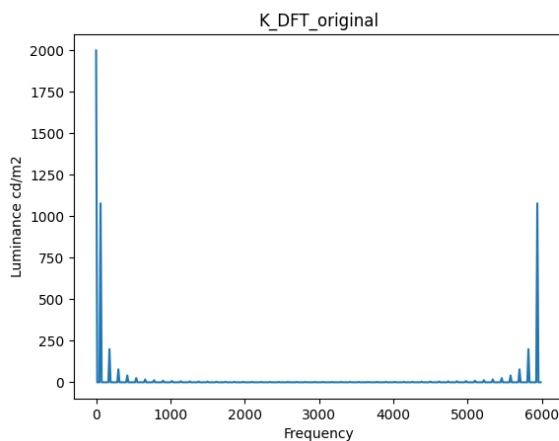


Figure 2. Perform DFT on the original data, note that the method reported in the book is used here, *i.e.*, divided by the square root of the number of sampling points.

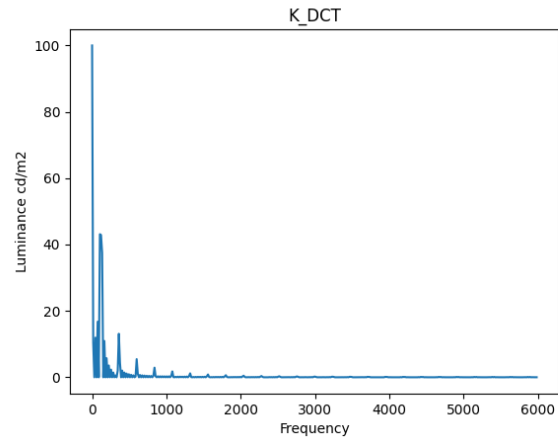


Figure 4. Perform DCT on the original data.

Abstract

In the process of reproducing, I found some errors and inconsistencies in Section 10.6 of the IDMS2022 version¹. This supplementary material points out these errors and suggests corrections. These corrections are applied to the main text.

¹<https://www.dropbox.com/s/un2mc9eihotafsh/IDMS1p1a.pdf?dl=0>

1. Experiments and Error Correction

1.1. Error in TCSF calculation formula

In the steps of P202 in the original book, step 10: "Using the value $w = w_s$ compute the estimated value...". Here w should be the frame refresh rate R , *i.e.*, $w = R$.

1.2. Incorrectly mixed DCT and DFT

This error is not obvious in this book, but in the original version [1], the error is very obvious. In many steps, the context DFT and DCT are inconsistent, and many contradictions arise. Please see Figure 2, Figure 3, and Figure 4, the results of DFT and DCT are obviously inconsistent. Here we should use DFT instead of DCT.

1.3. The inconsistent frame refresh rate R

Please refer to the example of P203 in the original book, where the frame refresh rate R has two values: 60Hz and 50Hz. We can only use one value.

1.4. The inconsistent method in P202 and the one used in the example

Specifically, step 6 in P202 claims that the result of DFT needs to be divided by the square root of the number of sampling points. But if it is directly applied to the example, the result obtained is shown in Figure 2, which does not match the given result. In fact, the result of DFT needs to be divided by the number of sampling points, and the result is shown in Figure 3. This correction was also applied to my paper. All DFTs in my paper are divided by the number of sampling points.

References

- [1] Andrew B Watson and Albert J Ahumada. 64.3: flicker visibility: a perceptual metric for display flicker. In *SID symposium digest of Technical Papers*, volume 42, pages 957–959. Wiley Online Library, 2011.