色彩科學導論與應用 3147

Assignment 06: LSB-K and OPAP-K Comparison

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1. Given k, show that the mean square error for LSB-K is

$$\text{MSE(LSB-k)} = \frac{2^{2k}-1}{6}$$

2. Given k, show that the mean square error for OPAP-k is

$$\text{MSE(OPAP-k)} = \frac{2^{2k-1}+1}{6}$$

3. Building a table to compare the following items for both LSB-K and OPAP-K methods from k=1 to k=7
   (1) embedding rate;
   (2) mean square error;
   (3) PSNR;
   (4) embedding efficiency

4. Type your proof using mathematical expression in a word file and submit both word file and PDF files.

5. 繳交: 請繳交壓縮檔案，壓縮方式請選 zip 或 rar。
   壓縮檔案名稱: 學號-ass06.rar，包含下列 2 檔案
   (1) Assignment 06.docx
   (2) Assignment 06.pdf
   請記得書寫學號、系級、姓名。