EE5175: Image Signal Processing

Lab-7

DFT and Magnitude-Phase Dominance

1. Perform 2D DFT on `peppers.pgm` using row-column decomposition. Plot the centred 2D magnitude spectrum.

2. Compute DFTs $F_1(k,l) = |F_1(k,l)|e^{j\phi_1(k,l)}$ and $F_2(k,l) = |F_2(k,l)|e^{j\phi_2(k,l)}$ of I_1(`fourier.pgm`) and I_2 (`fourier_transform.pgm`) respectively. Arrive at two new images I_3 and I_4 such that their DFTs are, respectively, $F_3(k,l) = |F_1(k,l)|e^{j\phi_2(k,l)}$ and $F_4(k,l) = |F_2(k,l)|e^{j\phi_1(k,l)}$.

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