Symmetry of the 2D FFT of a real image

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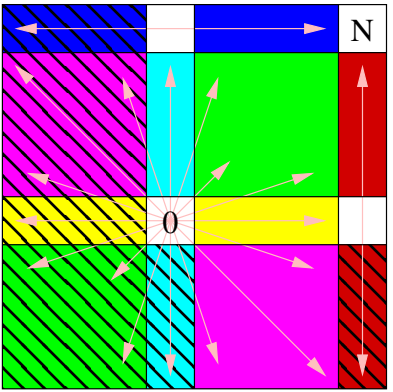
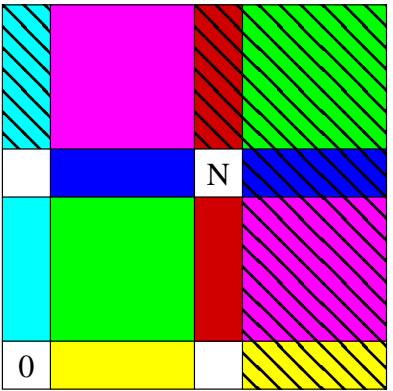
Visualization with centered origin:



In reality, the FFT's origin is at the lower left corner (0,0). However, if we place the origin at the center, we can more easily conceptualize the symmetry of the Fourier transform about the origin. The opposite ends of each rose colored arrow are complex conjugate pairs.
The symmetry of the Nyquist rows and columns is perhaps less obvious (dark red & blue). The Nyquist frequency is unsigned.

0 = Origin [0,0] N = Nyquist (not present in odd−size arrays)

Visualization with actual FFT ordering:



Each colored box is related to its matching box by a 180 degree rotation and complex conjugation. Only the four white pixels have no relation to any other. They are the only four real−valued pixels.

So, one of every pair of colored boxes is redundant (for example, the cross−hatched ones).