Image Transforms

Perform Fourier, Discrete Cosine, Radon, and Fan-beam transforms

**Functions**

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| [bwdist](http://www.mathworks.in/help/images/ref/bwdist.html) | Distance transform of binary image |
| [bwdistgeodesic](http://www.mathworks.in/help/images/ref/bwdistgeodesic.html) | Geodesic distance transform of binary image |
| [graydist](http://www.mathworks.in/help/images/ref/graydist.html) | Gray-weighted distance transform of grayscale image |
| [hough](http://www.mathworks.in/help/images/ref/hough.html) | Hough transform |
| [dct2](http://www.mathworks.in/help/images/ref/dct2.html) | 2-D discrete cosine transform |
| [dctmtx](http://www.mathworks.in/help/images/ref/dctmtx.html) | Discrete cosine transform matrix |
| [fan2para](http://www.mathworks.in/help/images/ref/fan2para.html) | Convert fan-beam projections to parallel-beam |
| [fanbeam](http://www.mathworks.in/help/images/ref/fanbeam.html) | Fan-beam transform |
| [idct2](http://www.mathworks.in/help/images/ref/idct2.html) | 2-D inverse discrete cosine transform |
| [ifanbeam](http://www.mathworks.in/help/images/ref/ifanbeam.html) | Inverse fan-beam transform |
| [iradon](http://www.mathworks.in/help/images/ref/iradon.html) | Inverse Radon transform |
| [para2fan](http://www.mathworks.in/help/images/ref/para2fan.html) | Convert parallel-beam projections to fan-beam |
| [radon](http://www.mathworks.in/help/images/ref/radon.html) | Radon transform |
| [fft2](http://www.mathworks.in/help/matlab/ref/fft2.html) | 2-D fast Fourier transform |
| [fftshift](http://www.mathworks.in/help/matlab/ref/fftshift.html) | Shift zero-frequency component to center of spectrum |
| [ifft2](http://www.mathworks.in/help/matlab/ref/ifft2.html) | 2-D inverse fast Fourier transform |
| [ifftshift](http://www.mathworks.in/help/matlab/ref/ifftshift.html) | Inverse FFT shift |

**Examples and How To**

* [Detecting Lines Using the Radon Transform](http://www.mathworks.in/help/images/radon-transform.html#f21-15119)
* [Reconstructing an Image from Parallel Projection Data](http://www.mathworks.in/help/images/the-inverse-radon-transformation.html#bq59t9i-1)
* [Reconstructing an Image from Fan-Beam Projection Data](http://www.mathworks.in/help/images/fan-beam-projection-data.html#f21-26788)
* [Reconstructing a Head Phantom Image](http://www.mathworks.in/help/images/fan-beam-projection-data.html#f21-26468)

**Concepts**

* [Fourier Transform](http://www.mathworks.in/help/images/fourier-transform.html)
* [Discrete Cosine Transform](http://www.mathworks.in/help/images/discrete-cosine-transform.html)
* [Radon Transform](http://www.mathworks.in/help/images/radon-transform.html)
* [The Inverse Radon Transformation](http://www.mathworks.in/help/images/the-inverse-radon-transformation.html)
* [Inverse Radon Transform Definition](http://www.mathworks.in/help/images/the-inverse-radon-transformation.html#bq59t8i-1)
* [Fan-Beam Projection Data](http://www.mathworks.in/help/images/fan-beam-projection-data.html)