Fourier Transforms

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Fourier Series

Applications

- Data compression

Applications

- Data compression
- Partial Differential Equations

Applications

- Data compression
- Partial Differential Equations
- A lot of stuff.

Fourier Transforms

- Complex input
  - Hermitian matrix
    $A = \bar{A}^T$
  - Conjugate transpose
    $\bar{A}^T$
  - Unitary
    $U * U = I$

Fourier Transforms

- Complex input
    - Hermitian matrix
      $A = \bar{A}^T$
    - Conjugate transpose
      $\bar{A}^T$
    - Unitary
      $U * U = I$
- Algorithms
    - Fast Fourier Transform (FFT)
    - Discrete Fourier Transform (DFT)