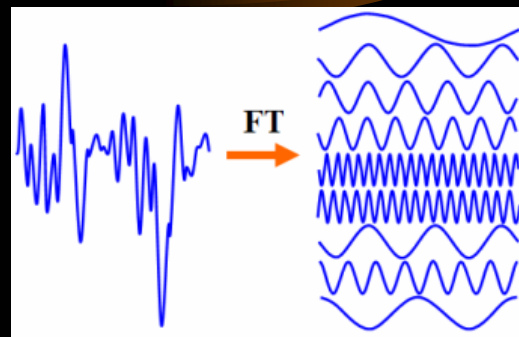
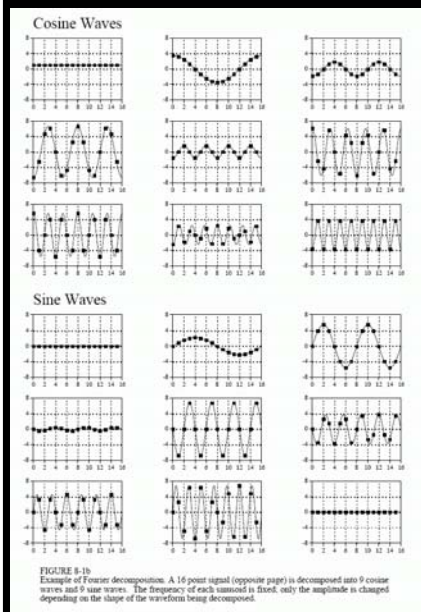
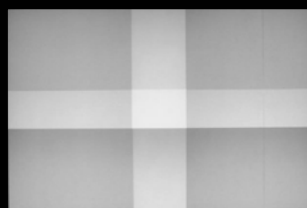


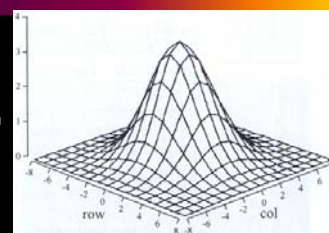
# Basic Functions



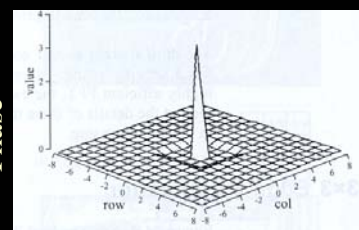
# 2D Fourier Transform



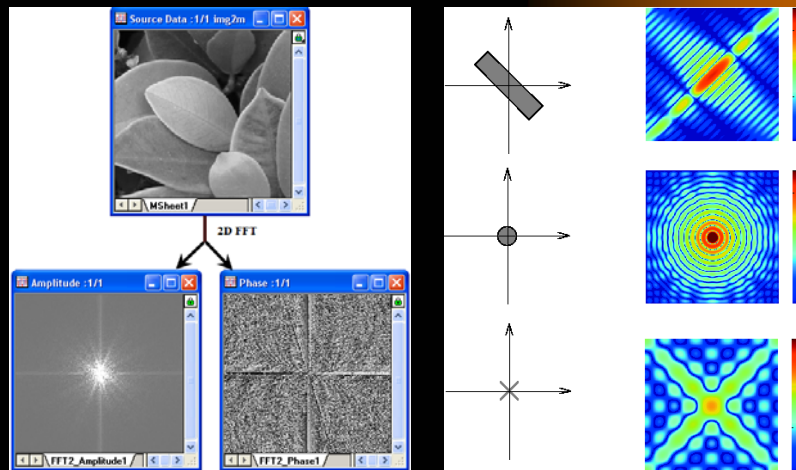
Amplitude



Phase



## Alternate Visualization



## Amplitude

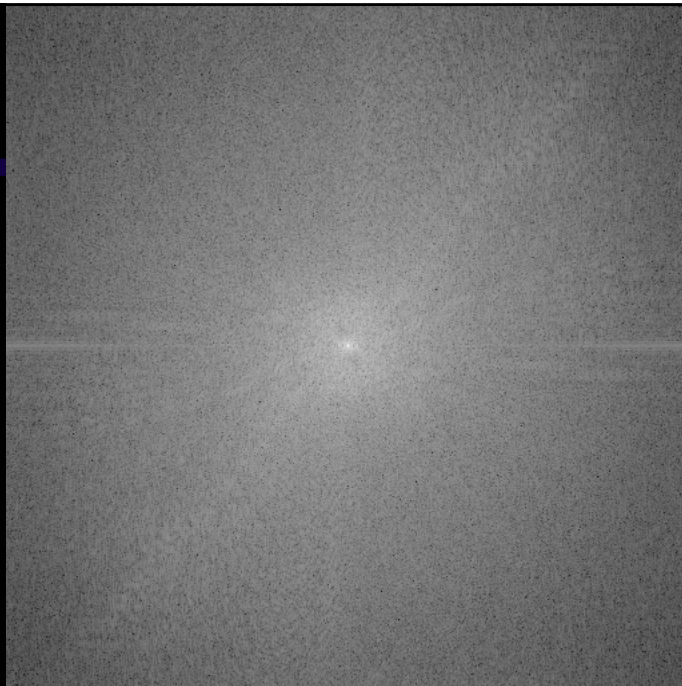
- Amplitude
  - **How** much details?
  - Sharper details signify higher frequencies
  - Will deal with this mostly



Slides from  
Marc Poleyfeys



This is the  
magnitude  
transform  
of the  
cheetah pic



Slides from  
Marc Poleyfeys

This is the  
phase  
transform  
of the  
cheetah pic



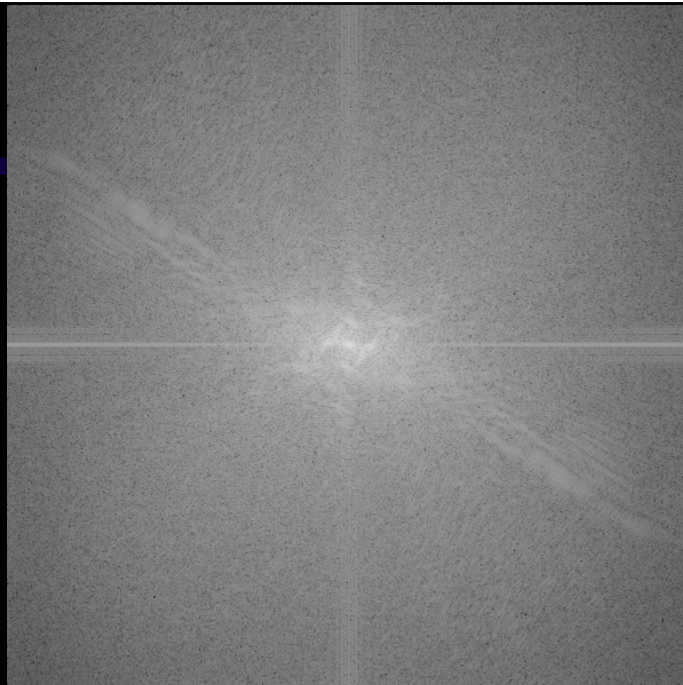
Slides from  
Marc Poleyfeys



Slides from  
Marc Poleyfeys



This is the  
magnitude  
transform  
of the  
zebra pic



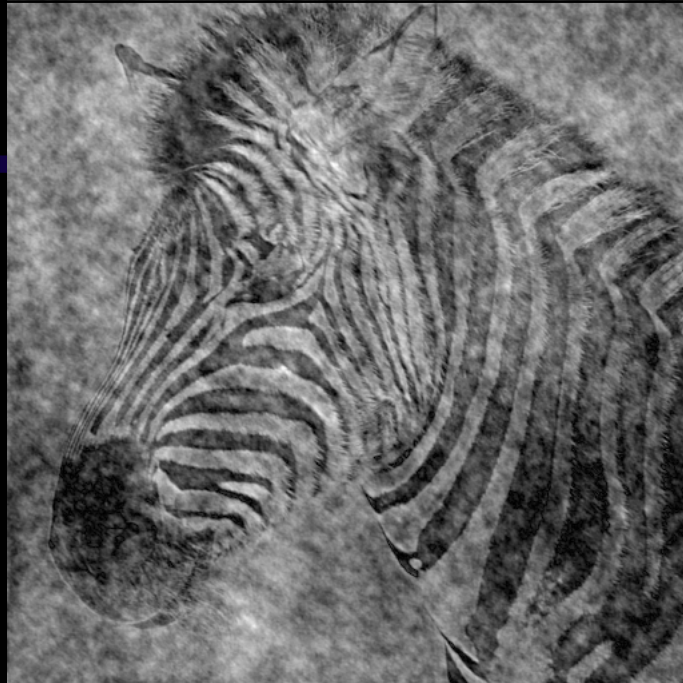
Slides from  
Marc Poleyfeys

This is the  
phase  
transform  
of the  
zebra pic



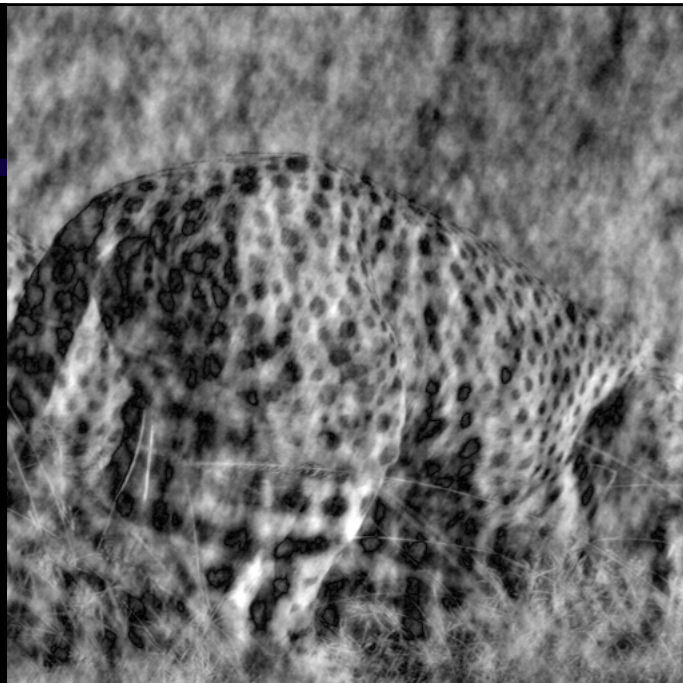
Slides from  
Marc Poleyfeys

Reconstruction  
with zebra  
phase, cheetah  
magnitude



Slides from  
Marc Poleyfeys

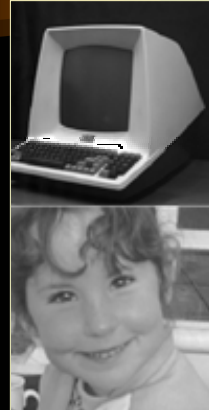
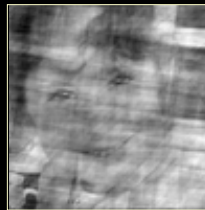
Reconstruction  
with cheetah  
phase, zebra  
magnitude



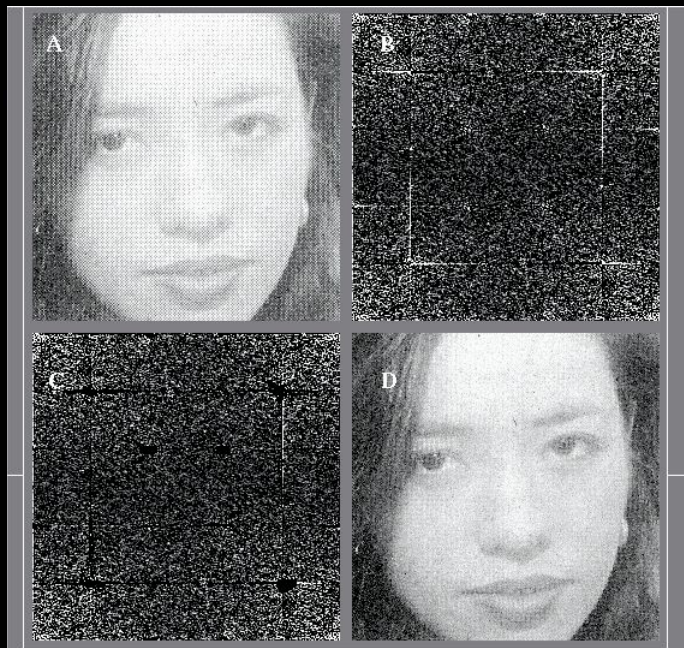
Slides from  
Marc Poleyfeys

## Phase

- **Where** are the details?
- Though we do not use it much, it is important, especially for perception



## Uses





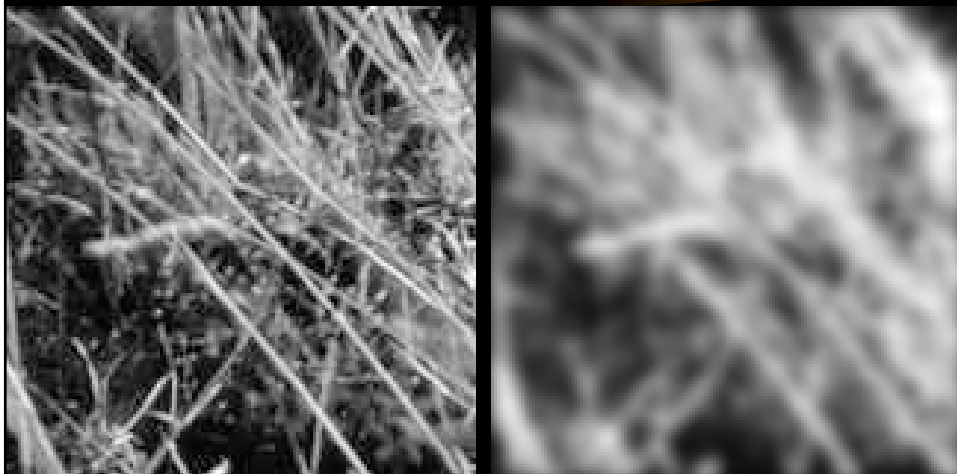
## *Smoothing by Averaging*

■



## *Smoothing with a Gaussian*

●





## *Aliasing*



## *Aliasing*

