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# Analyzing data from imaging experiments

**Anders Kaestner :: Laboratory for Neutron Scattering and Imaging**

# You have data...



3D and 4D imaging experiments produce large amounts of data

Gigabytes...
...or even
terabytes of data

Purpose of the experiment?

- 3D visualization
- Sample characterization
- Determine process parameters
- etc

# Important questions



Which information do you expect from the data?

**Quantitative**

- Material composition
- Material transport

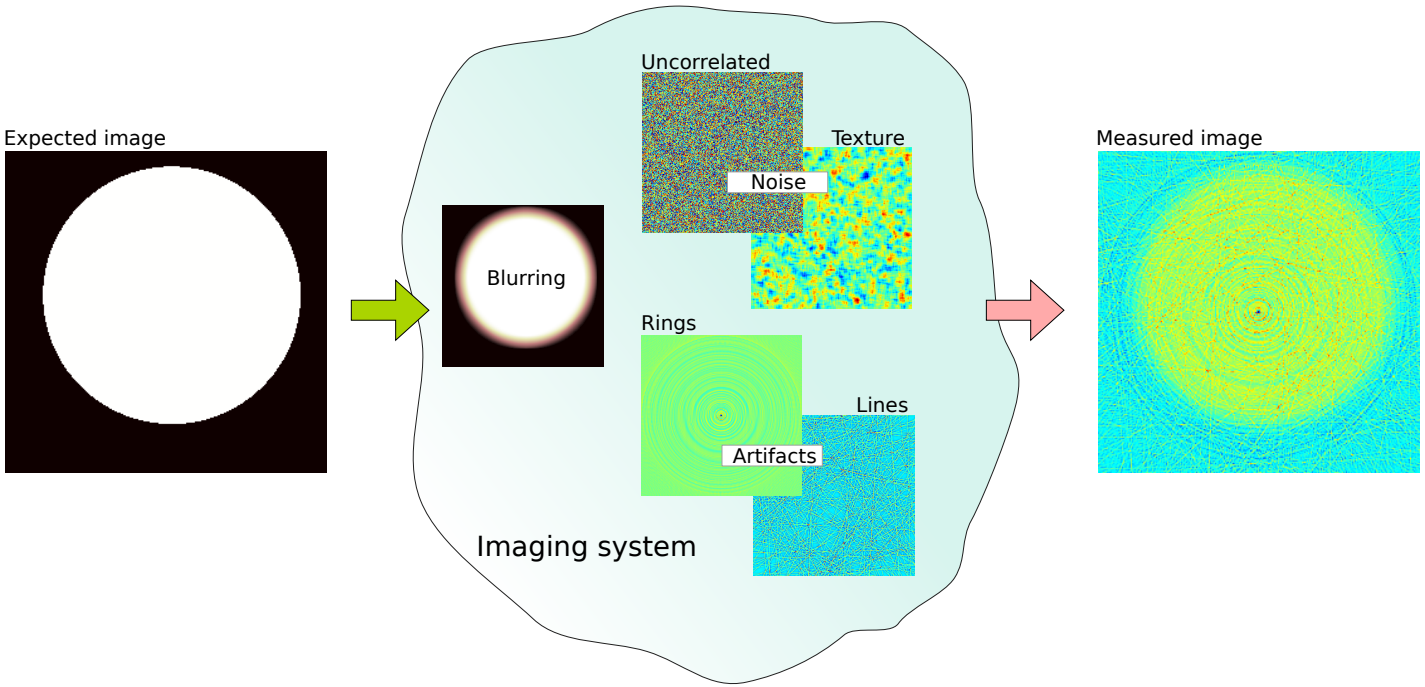
**Structure**

- Identify items
- Volume
- Shape

This will affect the choice of processing methods . . .

. . . and may even affect the choice of experiment strategy.

# Measurements are rarely perfect

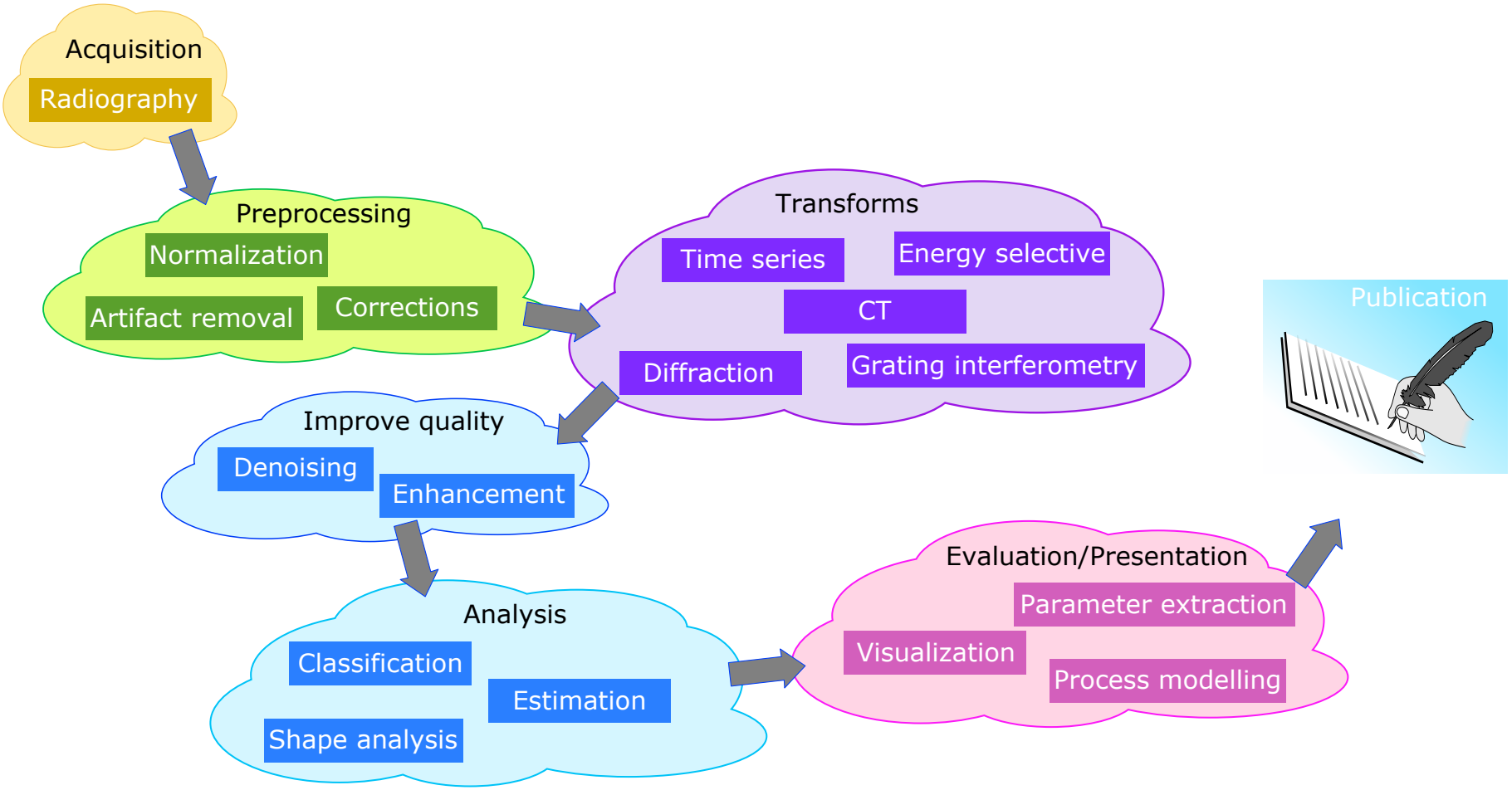



## Factors affecting the analysis

- Resolution
- Small relevant features
- Sample movement
- Noise
- Inhomogeneous contrast
- Artefacts

# A typical processing chain





# Contents of the image processing part



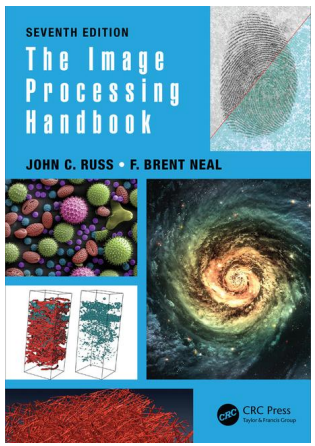
**Nov. 27** Processing: Images, Noise, Transformations, and Filters

**Dec. 4** Processing: Segmentation, Morphological image processing

**Dec. 11** Analysis: Pixels to statistics – Analysis strategies

**Dec. 18** Quantification: From statistics to quantitative bioimaging

Main literature:




John C. Russ
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