

Hybrid Imaging

Comprehensive examination topics

1. Representation, display, storage of digital images
2. Different image formats
3. Operations with images (smoothing, magnification, filtering, highlighting, recoloring, restoration, edge detection, segmentation)
4. Linear imaging systems (uniformity, homogeneity, point response function, modulation transfer function)
5. Quality assurance in image processing
6. Different ROI (Region of Interest) techniques
7. Reconstruction techniques (back projection, iteration, etc.)
8. Theoretical aspects of different tomographic processes
9. Image registration and image fusion
10. Three-dimensional image processing (display, operations)

Suggested readings:

Czernin, J., Dahlbom, M., Ratib, O., Schiepers, C.: Atlas of PET/CT Imaging in Oncology, Springer 2004