

Programmi dei corsi

R. H. Menk

The physics of imaging with x-rays and associated x-ray detectors

ore: 8

periodo: primavera 2019

programma:

Basics: Introduction to Poisson statistics

o Basics: Interaction of x-ray with matter

o Physics of generic photon detectors

§ Quantum efficiency

· Direct conversion detectors

o Charge generation and charge collection

§ Fano factor

· Indirect conversion detectors

o Scintillators

§ Integrating detectors

§ Counting detectors

§ Spectroscopic detectors

o Sampling

§ Space

§ Time

o Noise considerations

§ Signal to noise ratio

o Photon transfer curve

o Concept of spatial frequency depending detective quantum efficiency

§ Integrating detectors

§ Counting detectors

materiale: slides del docente