



UNIVERSITÀ
degli STUDI
di CATANIA

DIPARTIMENTO DI FISICA E ASTRONOMIA

DOTTORATO DI RICERCA IN FISICA

ANNO ACCADEMICO 2017 - 2018

Advanced detection techniques in medical physics

2 CFU

Teaching staff

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Program of the course:

Radiotherapy: conventional approach and hadrontherapy; laser-driven ion beams for the medicine. Charged particle and radiation equilibria. The cavity theory: Bragg-Gray, Spencer-Attix, Burlin theory; The Fano theorem;

Dosimetry fundamentals. Absolute and relative dosimetry; Calorimetric method, Faraday Cup method, ionisation method.

Dosimetry for hadrontherapy: the dosimetric protocols for proton and ion beams, relative detectors. Advanced detectors for high-rate pulsed beams.

Bibliography:

- "Introduction to radiological physics and radiation dosimetry", F H Attix, Wiley-VCH 2004.
- "The Physics of radiology", H E Johns and J R Cunningham, Charles Thomas Publisher, 1984