AbstractID: 4440 Title: QA for Linacs and MLC used for IMRT

Intensity-modulated radiotherapy (IMRT) has become a part of our routine treatment for external beam radiotherapy. Most quality assurance procedures set for linear accelerators and multi-leaf collimators (MLC) have been designed for conventional external beam radiotherapy. With IMRT, radiation portals are often irregular, small, off-center, and abutting in the middle of the target volumes, which require specific IMRT QA for the linear accelerators and MLCs. Some of the QA issues are related to the specific IMRT delivery method, and the specific treatment planning system. This review course will discuss (1) the characteristics of three major MLC collimators and the specific QA related to the unique MLC design; (2) additional QA for linear accelerators pertinent to the small MU and small field sizes used in IMRT; (3) tools often used to perform these QA tasks; (4) specific QA issues for different IMRT delivery methods, step and shoot vs sliding window.

Educational Objectives:

(1) Understand the characteristics of three major MLC systems.
(2) Understand different IMRT delivery methods and their specific QA issues.
(3) Understand effect of QA on the IMRT delivery accuracy.