

**CONFORMAL RADIATION THERAPY PLANNING IN THE PRESENCE OF
BREATHING MOTION – CURRENT TRENDS**

Mihaela ROSU

**Department of Radiation Oncology, Physics Division,
University of Michigan Medical School,
519 W. William, Argus 1 Building, Ann Arbor, 48103, Michigan, U.S.A.**

Abstract: *The aim of any radiotherapy is to tailor the tumoricidal radiation dose to the target volume and to deliver as little radiation dose as possible to all other normal tissues. However, the motion and deformation induced in human tissue by ventilatory motion is a major issue, as standard practice usually uses only one computed tomography (CT) scan (and hence one instance of the patient's anatomy) for treatment planning. The interfraction movement that occurs due to physiological processes over time scales shorter than the delivery of one treatment fraction leads to differences between the planned and delivered dose distributions. Due to the influence of these differences on tumors and normal tissues, the tumor control probabilities and normal tissue complication probabilities are likely to be impacted upon in the face of organ motion.*