

AbstractID: 11916 Title: Fluoroscopic Lung Tumor Tracking without Implanted Fiducial Markers

Accurate lung tumor tracking in real time is a crucial for image-guided radiotherapy of lung cancers. Existing lung tumor tracking approaches can be roughly grouped into three categories: (1) deriving tumor position from external surrogates; (2) tracking implanted fiducial markers fluoroscopically or electromagnetically; (3) fluoroscopically tracking lung tumor without implanted fiducial markers. The first approach suffers from insufficient accuracy, while the second may not be widely accepted due to the risk of pneumothorax. We have been developing various algorithms that facilitate the fluoroscopic lung tumor tracking without implanted fiducial markers. The talk will summarize what we have done and then discuss what we plan to do.

Learning Objectives:

1. Understand the significance of and difficulty for real-time localization of lung tumor
2. Understand various methods developed for markerless lung tumor tracking

Conflict of Interest:

The research presented here is partially supported by Varian Medical Systems.