## Medical Physics Seminar Monday, October 29th 2018 1345 HSLC ~ 4:00 P.M.



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## Determination of Lateral Half Value Layer Profiles in Computed Tomography

Shaped (bowtie) filters are an integral component in Computed Tomography (CT). As the shape and composition of these filters are generally not known by clinical Medical Physicists, this information must be inferred (e.g., through measurements). A novel measurement rig was developed to determine lateral half value layer (HVL) profiles at different fan angles with a constant focal spot to ionization chamber distance under a narrow beam geometry. This rig was used to measure HVL profiles on 6 CT scanners from the four major CT vendors covering all shaped filters and radiation qualities on each scanner. The resulting HVL profiles have applications in, for example, source modeling.



a) schematic representation of the geometry of a CT scanner along with the major components of the measurement rig. b) A 3D rendering of the measurement rig that was developed to determine fan angle dependent HVL profiles.



1345 Health Sciences Learning Center (HSLC) 4:00 - 5:00 P.M.