The objective of this work was the establishment and application of an indirect method that used a spectral model based on generalized simulated annealing algorithm to determine the spectrum of clinical linear accelerators photons based on the transmission curve. Analysis of the spectra was made by analytical determination of dosimetric quantities and related parameters.

---

**Equivalence between Solid Water and printed PLA plates for 6 MV clinical photon beam - An assessment using thermoluminescent dosimetry**

VALERIANO, C.C.S., Instituto de Pesquisas Energéticas e Nucleares – IPEN.
MORENO, C.S., Hospital Israelita Albert Einstein
CORRÊA, E.L., Instituto de Pesquisas Energéticas e Nucleares – IPEN.
SAKURABA, R.K., Hospital Israelita Albert Einstein
CAMPOS, L.L., Instituto de Pesquisas Energéticas e Nucleares – IPEN.

**Presenter:** CAMPOS, L.L., Instituto de Pesquisas Energéticas e Nucleares – IPEN., lcrodri@ipen.br

Three dimensional models of anatomical structures, produced by rapid prototyping are being adopted for medical application as hemodynamics studies and maxillofacial surgery planning. Models with geometrical accuracy can be achieved using medical images as MRI or CT and produced using polyurethane, polylactic acid and epoxy resins[1]. When a volume of tissue equivalent material is used to simulate an interaction of radiation, this volume is given by the name phantom [2]. Plates with different thickness were printed using a 3D printer using a filament of PLA. As the standard material it was used plates of Solid Water RMI-457. The plates of PLA and Solid Water were irradiated using a Linear Accelarator of 6 MV. For each material were performed irradiations for the same thickness of material, in each of them were used thermoluminescent dosimeters of LiF:Mg,Ti to measure the absorbed dose. This work aims to compare the thermoluminescent (TL) dosimetric behavior of PLA plates printed using a 3D printer and solid water plates in the absorbed dose evaluation using clinical photon beams.

---

**COMPARISON BETWEEN AAA AND ACUROS XB CALCULATION ALGORITHMS FOR VMAT TREATMENT PLANNING OF BRAIN MULTIPLE METASTASES USING OSL DOSIMETRY**

Daniel Villani, Instituto de Pesquisas Energéticas e Nucleares - IPEN/USP, Carolina dos Santos Moreno, Hospital Israelita Albert Einstein, Vinicius Demanboro Gonçalves, Hospital Israelita Albert Einstein, Roberto Kenji Sakuraba, Hospital Israelita Albert Einstein, Letícia Lucente Campos, Instituto de Pesquisas Energéticas e Nucleares - IPEN/USP.