AAPM GUIDED TOURS PRESENTATION PROPOSAL:

**End to End Motion QA in Radiation Therapy**

**Treatment Planning**

The presentation will focus on the QA tools provided by Modus Medical Devices for 4D IGRT QA. With an advancement in treatment techniques designed to escalate delivered tumor doses, there is an increasing need for advanced QA tools in radiation therapy treatment planning. Modus Medical Devices produces 3 phantoms that are used in the motion QA process and this presentation will provide an overview on their use cases.

**Introduction to 4D IGRT (5-7 min)**

*Why is there a need for 4D IGRT?*

Focus on reduction of target volumes providing the ability for dose escalation and increasing the probability of positive outcomes for patients.

*Current methods of mitigating patient motion and the future of 4D treatment:*

- Gating methods for CT-Based systems: Forced constricted breathing
  - Deep Inspiration Breath hold
  - Free Breathing

- Gating and tracking methods for MR based planning: Gated treatment with live imaging
  - Online tumor Tracking

**End to End QA using Modus Medical Devices (10-13min)**

*Introduction to Modus Medical Devices CT and MR offerings for End to End QA*

High level overview of the 3 products

- Highlight **pRESP** and **pResp Platform** for CT-based 4D planning
- Highlight **MRI4D** for MR and CT-based planning

*End to End QA using CT Based Phantoms (pRESP, pRESP Platform)*

Demonstrate how devices mimic patient motion including tumor and chest wall including SGRT

*End to End QA using MR Based phantom (MRI4D)*

Demonstrates how device mimics patient motion including tumor, chest wall including SGRT as well as latency measurements of your system without the need of an external oscilloscope.

Please contact me for any questions regarding the presentation proposal.

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