

Storage Media for Determining Optimal Respiratory Treatment

Systems, methods, and computer-readable media storing instructions for automatically determining optimal treatment phase for delivering radiation therapy based on respiration motion of a patient

Georgia Tech inventors have developed systems, methods, and computer-readable media storing instructions for automatically determining optimal treatment phase for delivering radiation therapy based on respiration motion of a patient. The proposed invention has the potential to improve radiation treatment.

Summary Bullets

- Automatically determines optimal radiation therapy treatment phase
- Enables higher, more effective radiation dosage amounts
- Minimizes unnecessary radiation to normal surrounding tissues

Solution Advantages

- Automatically determines optimal radiation therapy treatment phase
- Enables higher, more effective radiation dosage amounts
- Minimizes unnecessary radiation to normal surrounding tissues
- Improves radiation therapy outcomes

Potential Commercial Applications

- Improving radiation targeting and delivery within the chest and abdomen, which is greatly affected by the respiratory cycle

Background and More Information

In radiation therapy, a very precisely targeted radiation beam is aimed at a tumor. Respiratory gating is the process of continuously monitoring the movement of tumors during normal breathing. Radiation is only delivered when the tumor is exactly in the right place, and the treatment beam automatically turns off when the tumor moves outside of the target field. Errors in selecting the treatment phase can have devastating consequences for the surrounding normal tissue.

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Publications

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Images

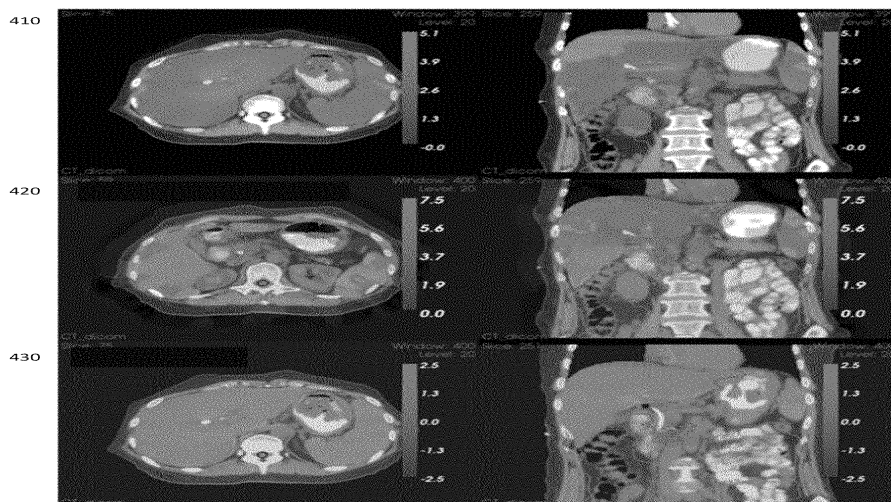


FIGURE 4

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<https://s3.sandbox.research.gatech.edu//print/pdf/node/3459>