

# REAL-TIME INTERFERENCE COMPENSATION IN MRI GUIDED RADIOTHERAPY

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## Technology Description

Researchers at Washington University in St. Louis have developed a method to improve image quality during MR imaging guided radiation therapy (MR-IGRT) by correcting for B<sub>0</sub> fluctuation in real-time. The corrections reduce electromagnetic interference (EMI) between the MRI scanner and linear accelerator, which creates imaging artifacts.

Currently, EMI-related imaging issues prevent physicians from using more advanced volumetric modulated arc therapy (VMAT) techniques. VMAT use with MR-IGRT would dramatically reduce the procedure time per patient while improving tumor targeting.

## Publications

- Curcuru AN, Lewis BC, Kim T, Yang D, & Gach HM. (2021). [Effects of B<sub>0</sub> eddy currents on imaging isocenter shifts in 0.35-T MRI-guided radiotherapy \(MR-IGRT\) system](#). *Medical Physics*, 48(6): 2929-2938.

## Applications

- MR imaging guided radiation therapy (MR-IGRT)

## Key Advantages

- Reduces EMI between MRI and Linac subsystems
- Enables volumetric modulated arc therapy for MR-IGRT

**Patents:** Pending

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