Open source diffusion MRI technology for brain cancer research

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Diffusion MRI in Brain Cancer Research

- Diffusion MRI Tractography: Trace white matter connections.

- Diffusion MRI Quantification: Measure cellular microstructure.

- Goal: Create state-of-the-art diffusion MRI workflows for brain cancer research.

- 3D Slicer: Open-source platform for visualization, surgical planning, surgical navigation, and medical image computing

U01 Aims

1. Extend 3D Slicer diffusion MRI infrastructure and interoperability.

   - Enable state-of-the-art data and develop first I/O library for DICOM tractography.

2. Create workflows for three key tasks in cancer research:

   - Interactive multi-fiber tractography, automatic tract identification, and computation of microstructure parameters

3. Document, test, and release software to the community.