MRI Pulse Sequence for B1+ Mapping using the Bloch-Siegert Shift at 7T

This MRI pulse sequence enables inhomogeneity in the transmit field to be mapped using the Bloch-Siegert shift. This sequence was written in Siemens' VE12u IDEA environment for use on a Siemens 7T Terra MRI system.

Please note that this approach to estimating the transmit field requires accurate phase reconstruction for each off-resonance pulse used to impart the Bloch-Siegert shift. We have image reconstruction code embedded in Gadgetron which can be provided to assist, if required.

Please note that the provided source code is to be considered a template only and it is the responsibility of the IDEA programmer who modifies and compiles the code and installs the binaries on site to run the system-specific tests and assess security and safety issues. This should only be used at your research institute.

The Physicist and IDEA programmer is the responsible MR physicist and certified IDEA/ICE programmer at your research institute. Only he/she as a qualified IDEA/ICE programmer certified by Siemens may use this software and information.

You need an IDEA license on your scanner which allows you to run own sequences and ICE programs. The IDEA environment and license are provided directly from Siemens.

This is the classic (single echo) version of the imaging sequence used in Corbin et al. MRM 2019: https://pubmed.ncbi.nlm.nih.gov/31321823/

Category
Software/Image Publishing

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Learn more

References

1. Corbin N, Acosta-Cabronero J, Malik SJ, Callaghan MF(2019) , https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6771691/, Magnetic Resonance in Medicin, 2003-2015