Docket #: S09-379

Hybrid Referenceless and Multibaseline PRF-Shift MR Thermometry

Researchers at Stanford University have developed a more accurate method for estimating temperatures in the heart during thermal therapies such as cardiac ablation. This new method is a hybrid, combining the strengths of referenceless and multi-baseline thermometry to subtract the effects of heart motion and respiration while providing a temperature estimate with a low margin of error.

Applications

- **Medical monitoring** - used to monitor thermal therapies, such as ablation, during cardiac procedures

Advantages

- **Greater accuracy** - estimates temperature with much lower error than techniques based on multi-baseline subtraction or referenceless methods alone
- **Simple** - requires no gating navigator acquisitions or susceptibility modeling

Publications

- Grissom WA, Rieke V, Holbrook AB, Medan Y, Lustig M, Santos J, McConnell MV, Pauly KB. Hybrid referenceless and multibaseline subtraction MR thermometry for monitoring thermal therapies in moving organs.Med Phys. 2010 Sep;37(9):5014-26.
- U.S. Patent Application Nos. 13/009,209 and 13/009,318

Patents

- Published Application: 20110175615
- Published Application: WO2011090990
- Published Application: 20110178386
- Issued: 8,810,246 (USA)
- Issued: 8,482,285 (USA)

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