Real Time MRI Motion Correction with Markerless Tracking

Prospective motion correction for MRI neuroimaging has been demonstrated using MR navigators and external tracking systems using markers. The drawbacks of these two motion estimation methods include prolonged scan time plus lack of compatibility with all image acquisitions, and difficulties validating marker attachment resulting in uncertain estimation of the brain motion respectively. We have developed a markerless tracking system, and in this work we demonstrate the use of our system for prospective motion correction, and show that despite being computationally demanding, markerless tracking can be implemented for real time motion correction.