


Exploiting similarity in adjacent slices for fast MRI (Technion)

code: MED-1639

Magnetic Resonance Imaging (MRI) has become a well-established medical diagnostic tool for imaging structures within the brain and body of a patient. There is a fundamental trade-off between image quality and acquisition/scan time, and an urgent need in speeding-up the acquisition of MRI. However, current methods for speeding up image acquisition require extended computational time and high memory usage and often lead to reduced signal-to-noise ratio (SNR) and to image degradation at high speed-up factors. The presented technology utilizes the similarity between slices to speed up the entire acquisition process. This significant acceleration of MRI scan time with minimum compromise on image quality is expected to bring a paradigm shift reducing the time needed for sedation in children, decrease patient discomfort and increase the availability and accessibility of the MR modality. Moreover, it will allow deeper analysis of various brain activities and time varying processes in fMRI, thanks to the improvement in the temporal resolution in this modality.

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