

## **Technology for encoding with detectors in MRI**

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The possibility of studying the living human body with resolution, sensitivity and speed considerably above that provided by conventional MRI gradient encoding offers the potential to bring new levels of biology under the lens of non-invasive imaging. This talk will discuss our work and others toward improving the detection and transmission technology used in MRI for supplementing gradient encoding as well as where we stand compared to theoretical limits. Finally, some of the benefits of improved encoding will be shown, including whole-brain single-shot Echo Volume Imaging (EVI) of the head at 3.5mm resolution and 20 frames per second, and high resolution laminar resolved fMRI at 0.75mm resolution.