

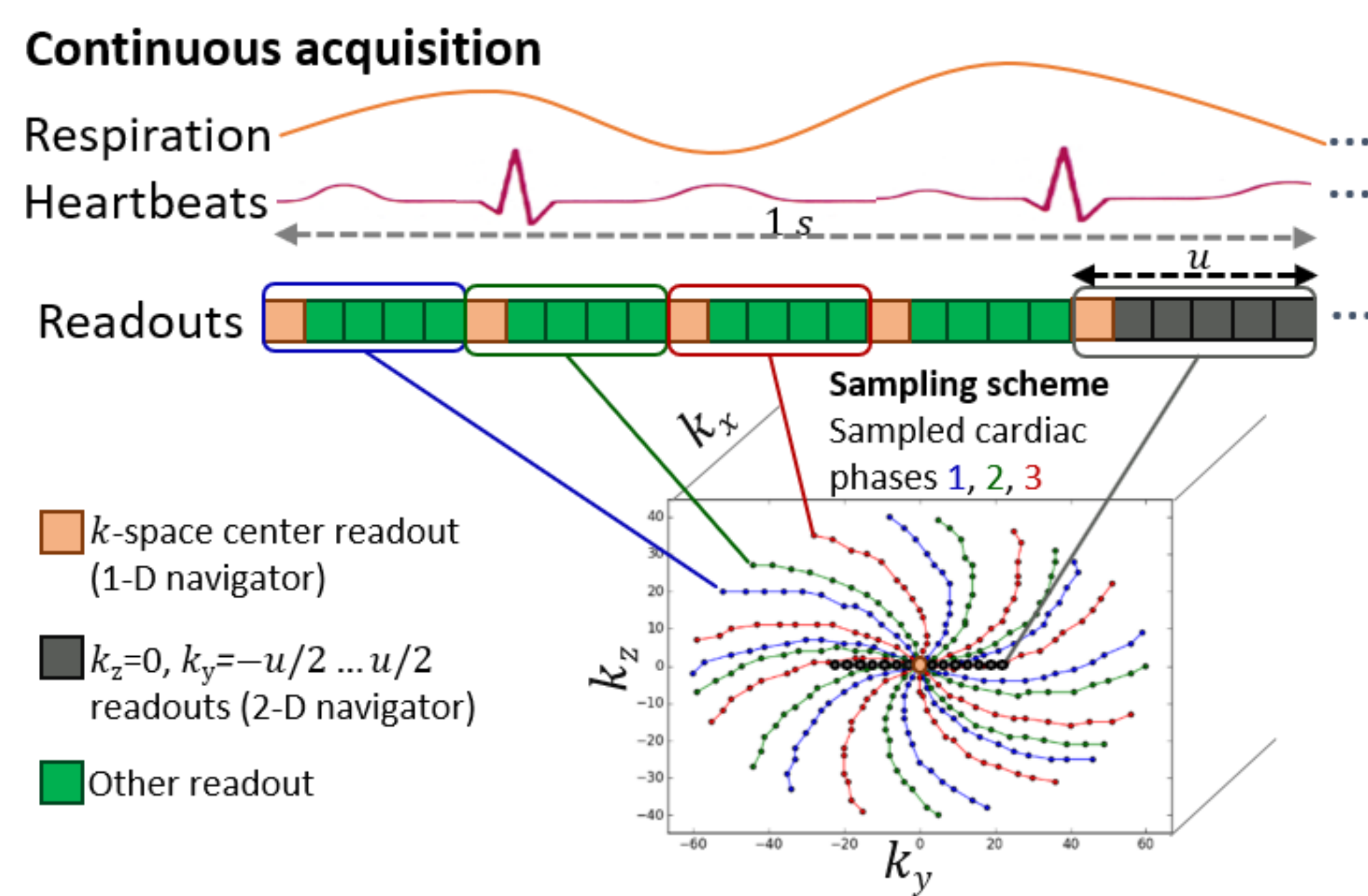
2-D Respiration Navigation Framework for 3-D Continuous Cardiac Magnetic Resonance Imaging

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Continuous Cardiac MR Acquisition



Continuous data sampling

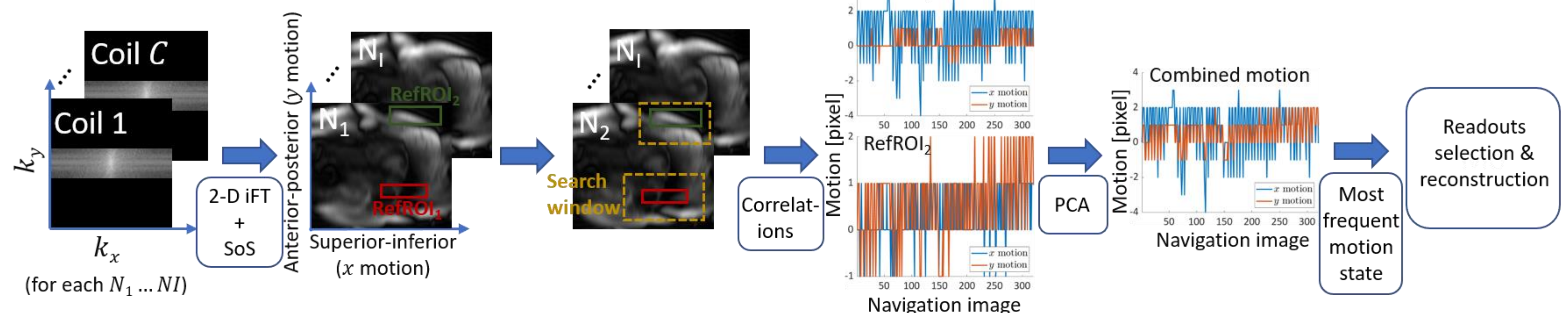
- Incoherently undersampled Cartesian phase encoding plane
- Pseudo-spiral spokes

Respiration navigation

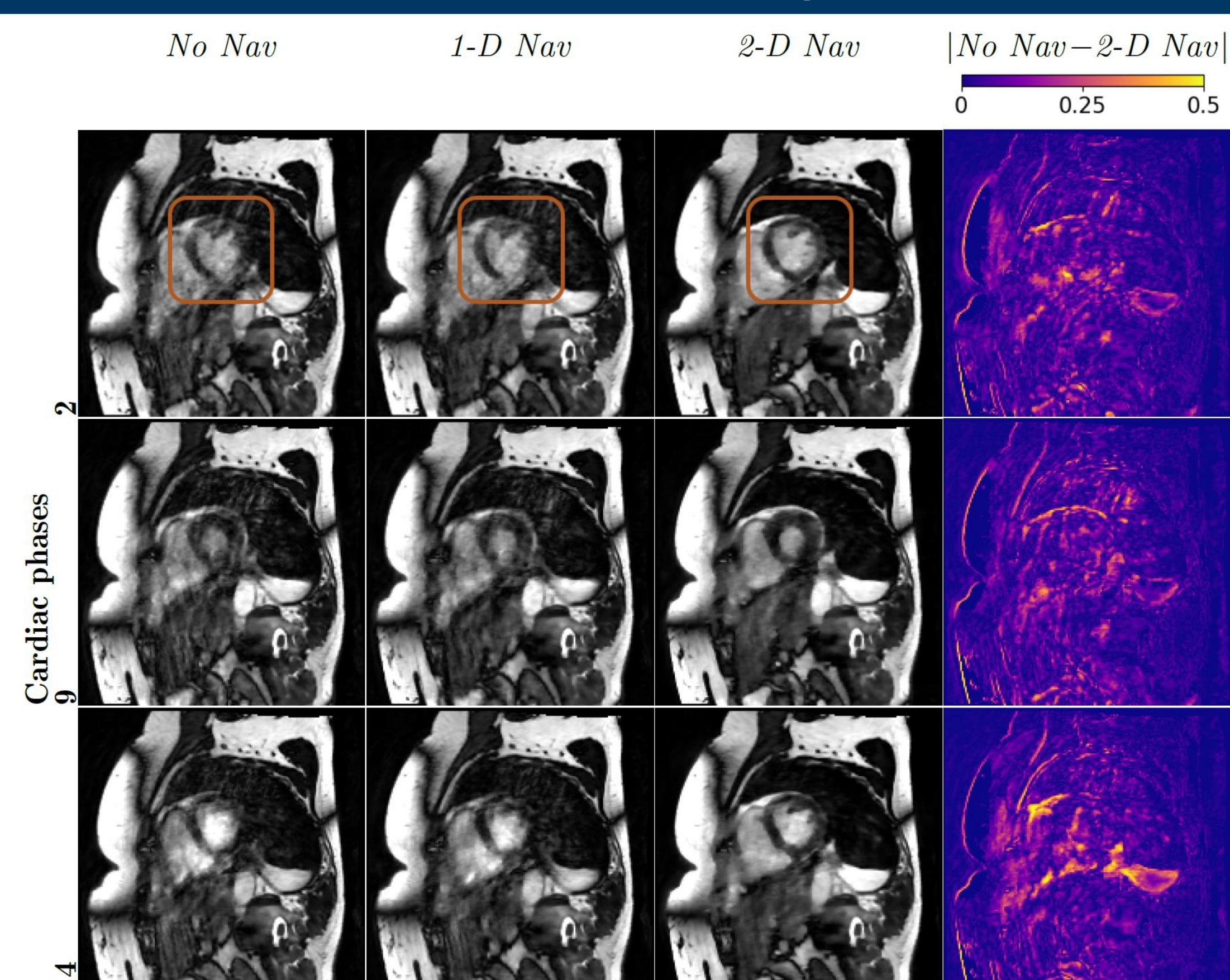
- Every $t = 1s$: Fully sampled k -space center
- 2-D planes mainly orientated in AP and SI direction
- Simultaneously used for navigation and reconstruction

2-D Respiration Motion Extraction

Extraction of 2-D respiration motion based on cross-correlations and PCA
Selection of data from most frequent motion state for reconstruction



Respiration-compensated Image Reconstruction



- **No respiration compensation:** Heavy respiration artifacts
- **1-D respiration compensation:** Better image quality
- **2-D respiration compensation:** Sharper tissue boundaries, almost completely removed respiration induced artifacts

Contact



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