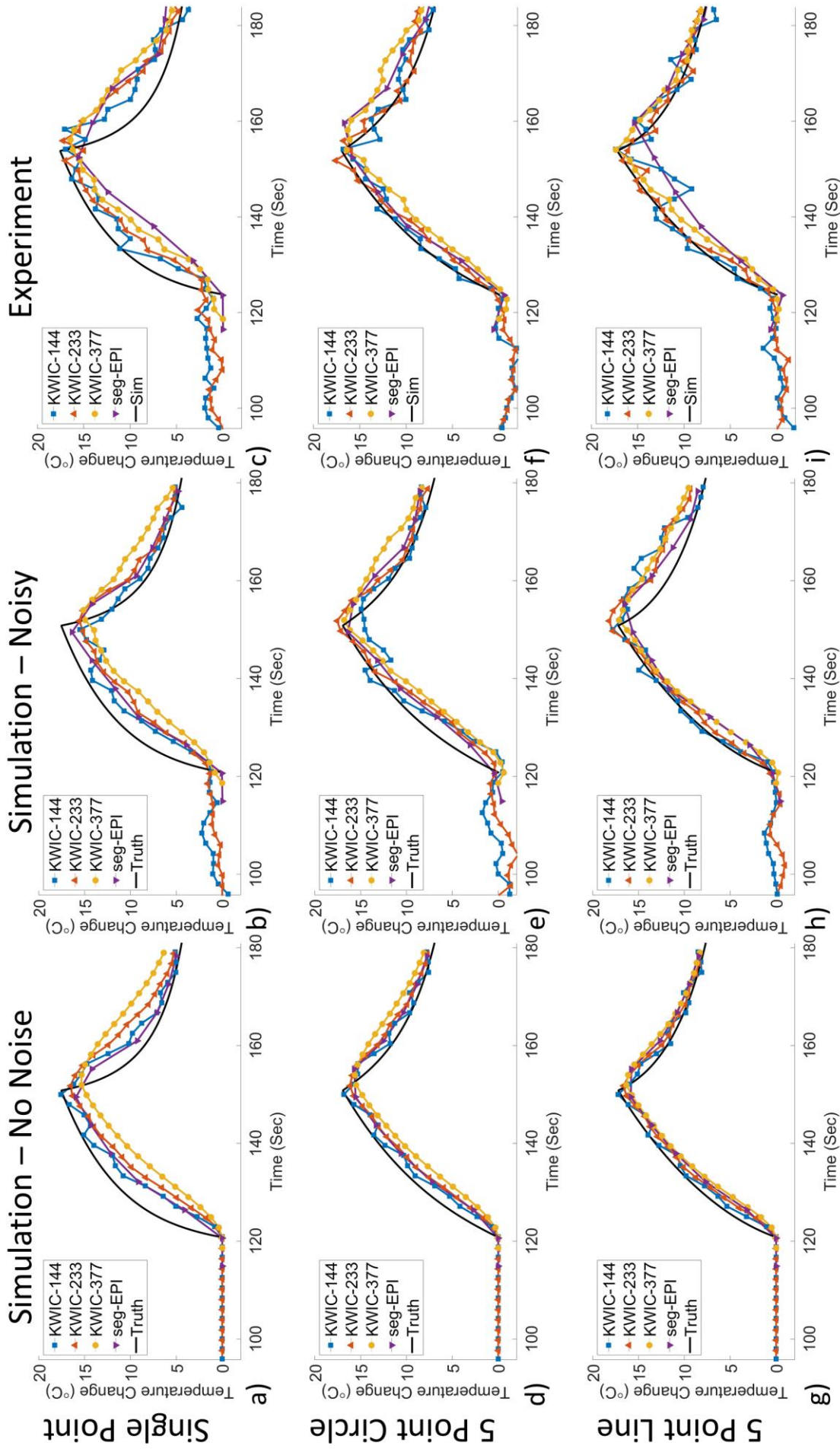
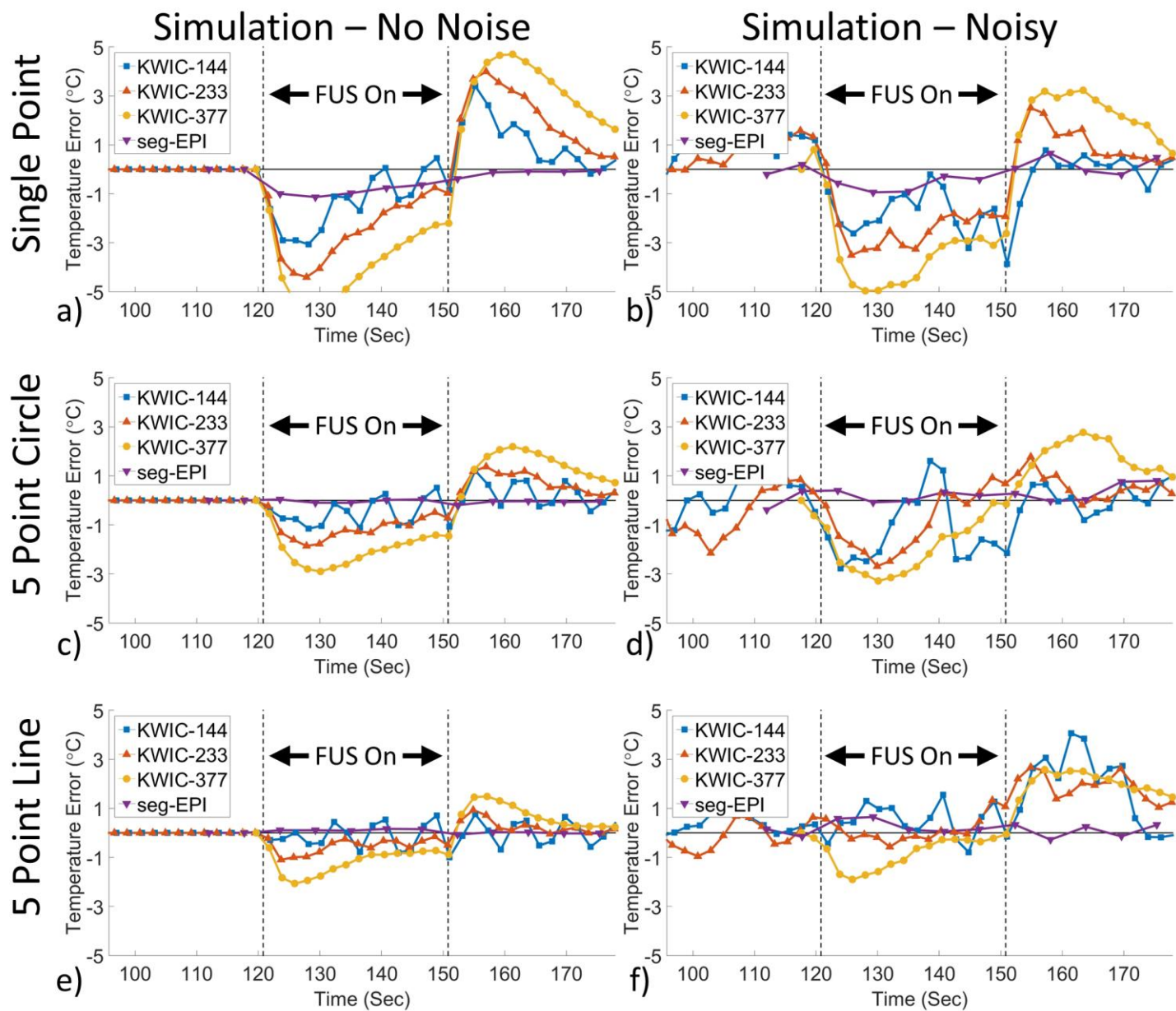


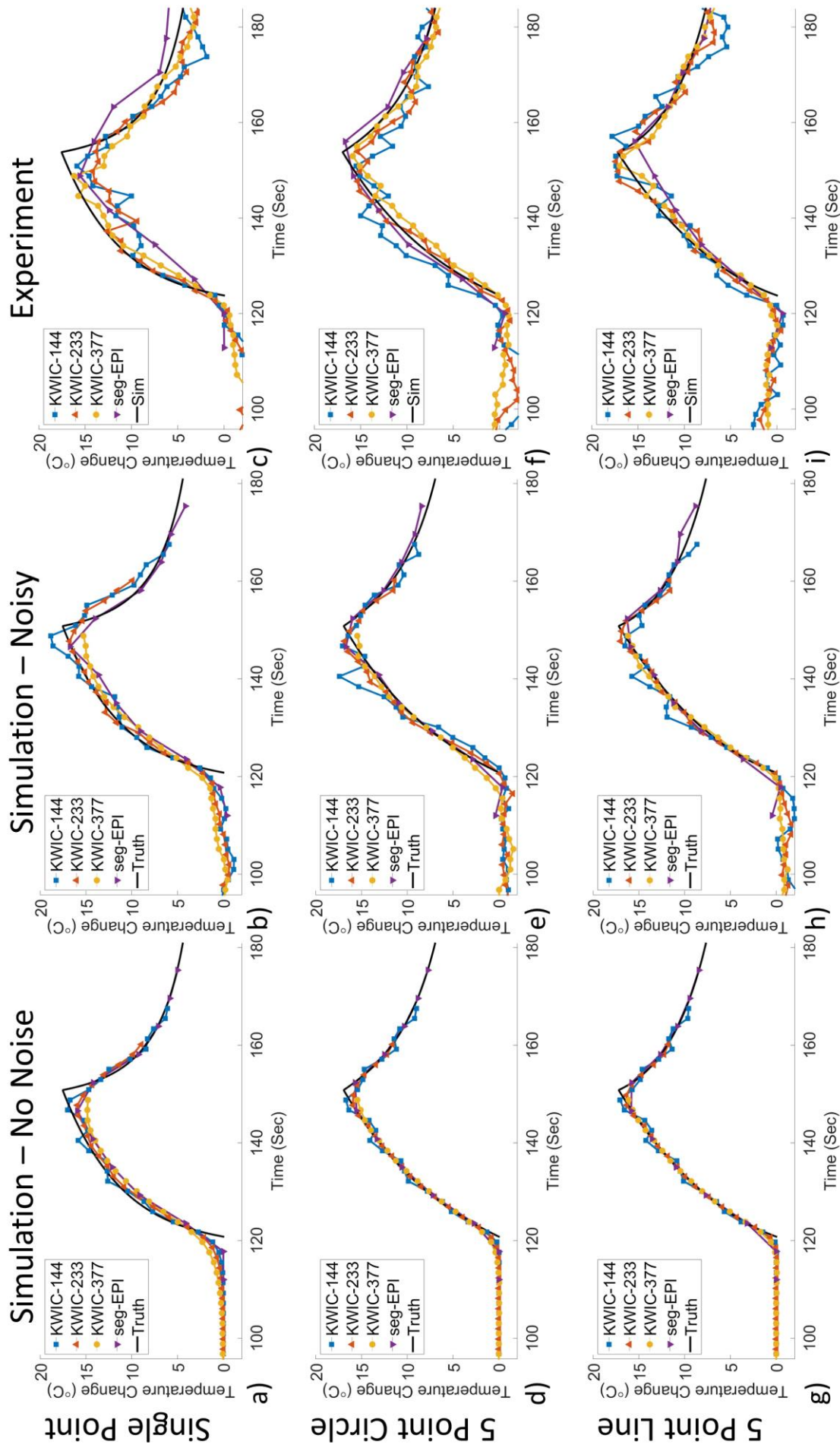
Supporting Figure S1. Asymmetric KWIC: Temperature vs time (at the center of k -space) at the peak temperature voxel for each of the KWIC windows and 3D seg-EPI using a,d,g) simulated data without noise, b,e,h) with noise and c,f,i) experimental data for a-c) the single point trajectory, d-f) 5-point circular trajectory and g-i) 5-point line trajectory.



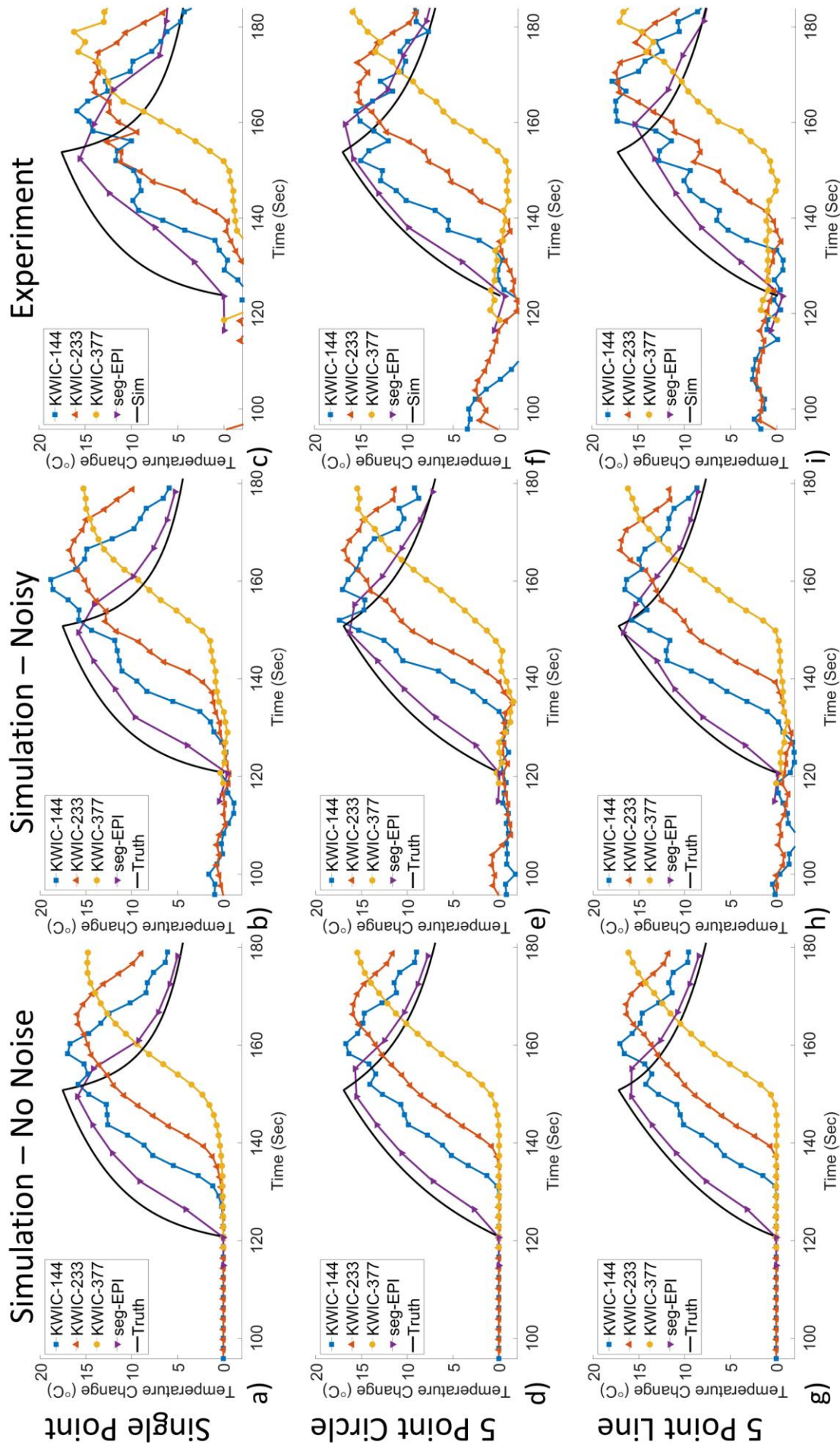
Supporting Figure S2. Data from Supporting Figure S1 where temperatures are plotted at the time when data acquisition has finished.



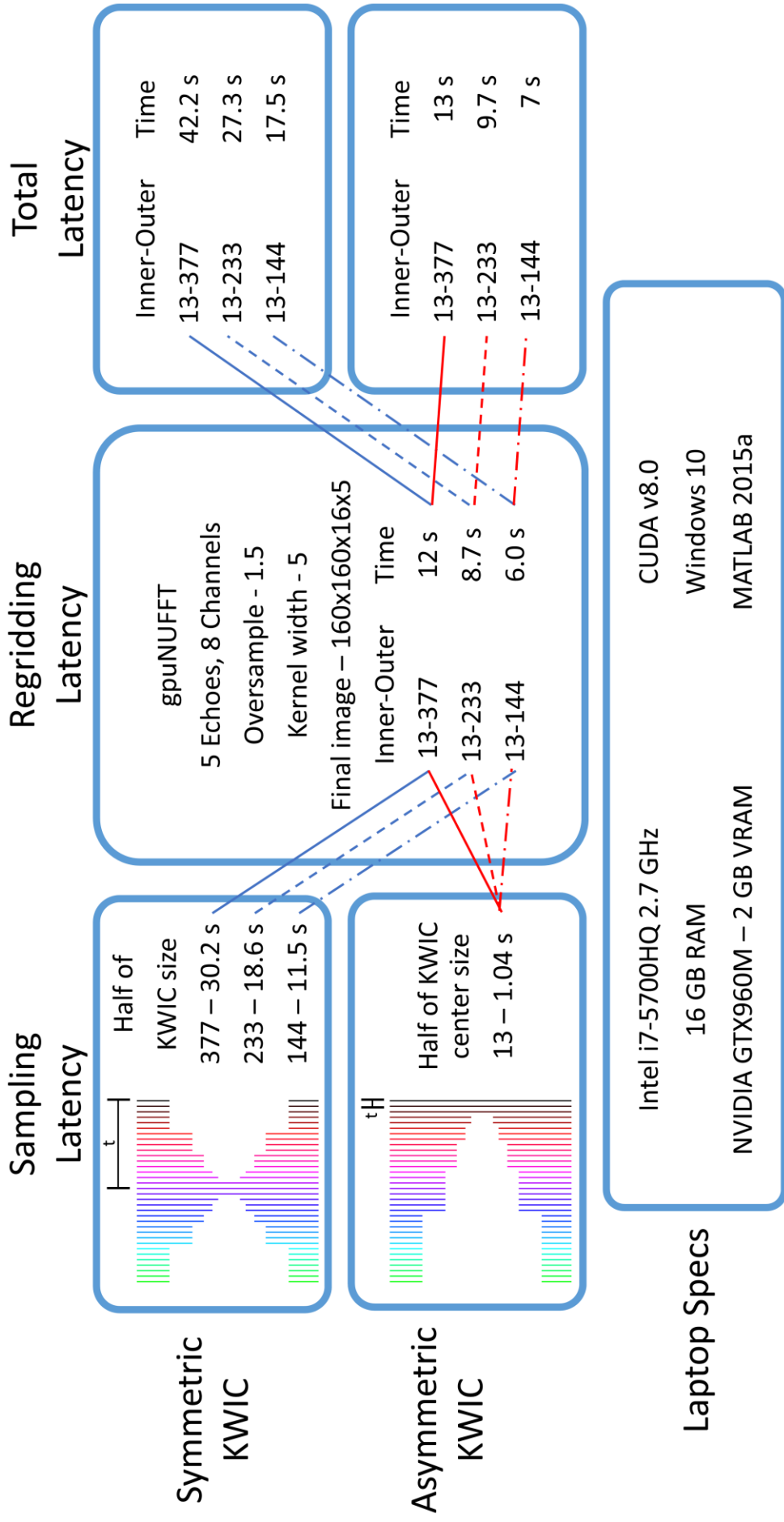
Supporting Figure S3. Difference from true temperature from Supporting Figure S1 simulated data a,c,e) without noise and b,d,f) with noise for a-b) the single point trajectory, c-d) 5-point circular trajectory and e-f) 5-point line trajectory.



Supporting Figure S4. Symmetric KWIC: Temperature vs time (at the center of k -space) at the peak temperature voxel for each of the KWIC windows and 3D seg-EPI using a, d, g) simulated data without noise, b, e, h) with noise and c, f, i) experimental data for a- c) the single point trajectory, d-f) 5-point circular trajectory and g-i) 5-point line trajectory.



Supporting Figure S5. Data from Supporting Figure S4 where temperatures are plotted at the time when data acquisition has finished.

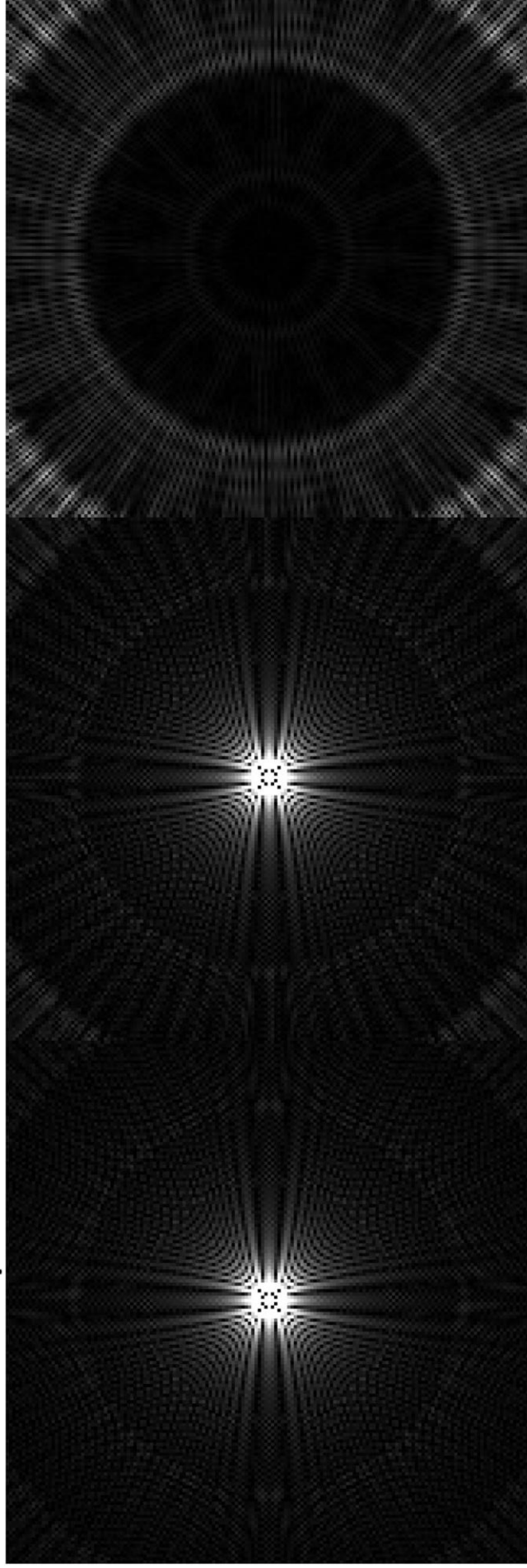


Supporting Figure S6. Reconstruction latency for symmetric and asymmetric KWIC windows used in this work and reconstructed on a laptop using MATLAB. Reconstruction times using gpuNUFFT (8) can vary significantly depending on the oversampling factor, kernel width, final image size, number of echoes and number of channels.

Full k-space

KWIC

Difference x3



Supporting Figure S7. PSF from a left) fully sampled pseudo-golden angle SOS with 377 total lines, center) KWIC sampled SOS with 13 central and 377 total lines. Right) Difference between the full and KWIC sample PSFs multiplied by 3.