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Sparsity-based photoacoustic image reconstruction with a linear array transducer and direct measurement of the forward model (Erratum)

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This article [*J. Biomed. Opt.* **24**(3), 031015 (2019) doi: 10.1117/1.JBO.24.3.031015] was originally published online on 8 December 2019 with an error in the code that generated the noise for the RF data using the calculated signal-to-noise ratio values in the simulation session. As a result of the error, all reported values were listed with a 3-dB offset (i.e., a reported value of 5 dB should instead be 8 dB). None of the conclusions in the paper were affected. The mistake was corrected in the following three parts of the paper.

1. Figure 3a, and Fig. 3 caption.

Original:

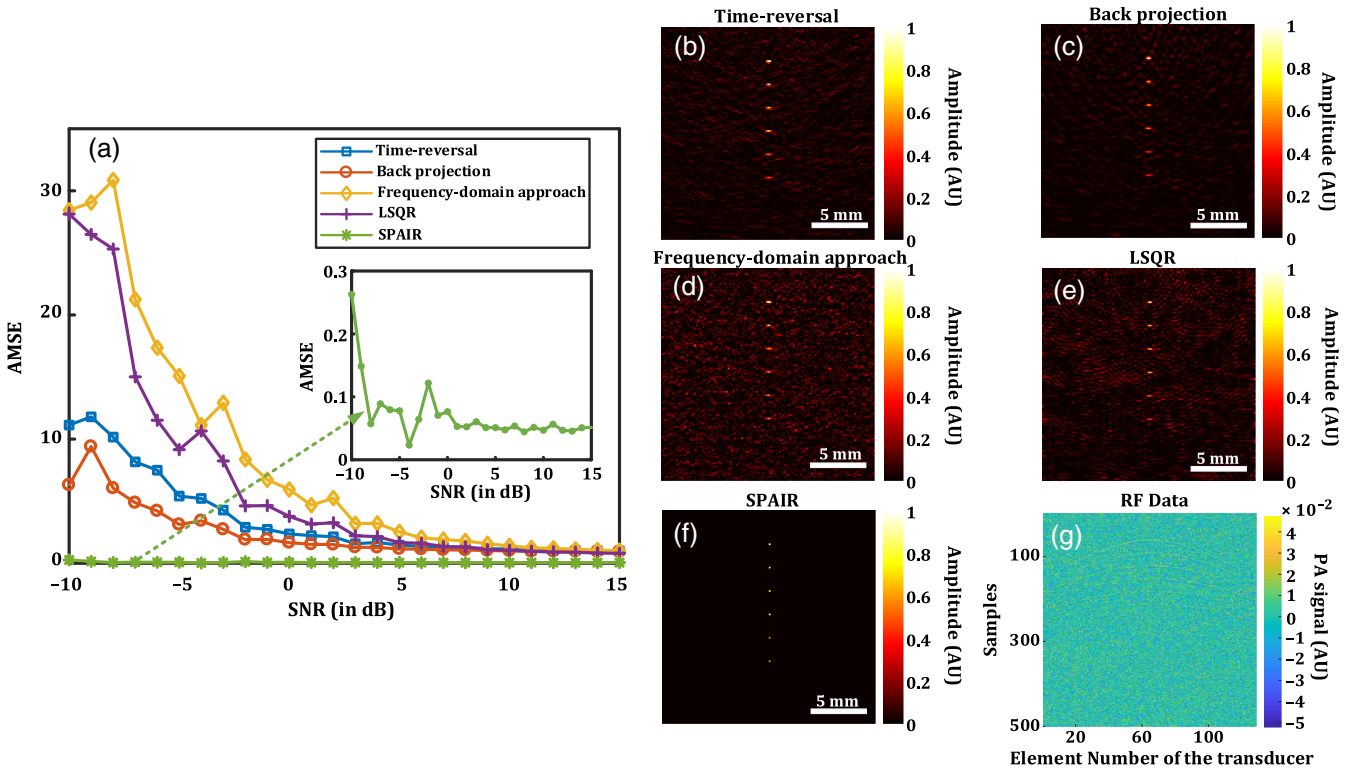

Fig. 3 The AMSE of the IPD from the RF data with different SNRs for time reversal (blue), back projection (red), frequency-domain approach (yellow), LSQR (purple), and SPAIR (green). The inset shows a zoomed-in view of the proposed method. (b) The reconstructed IPD image from time-reversal approach with −5-dB noise in the RF data, (c) the reconstructed IPD image from back projection approach with −5-dB noise in the RF data, (d) the reconstructed IPD image from frequency-domain approach with −5-dB noise in the RF data, (e) the reconstructed IPD image from LSQR with −5-dB noise in the RF data, (f) the reconstructed IPD image from SPAIR with −5-dB noise in the RF data, and (g) the corresponding noisy RF data with an SNR of −5-dB. The scale bar is 5 mm.

Corrected:

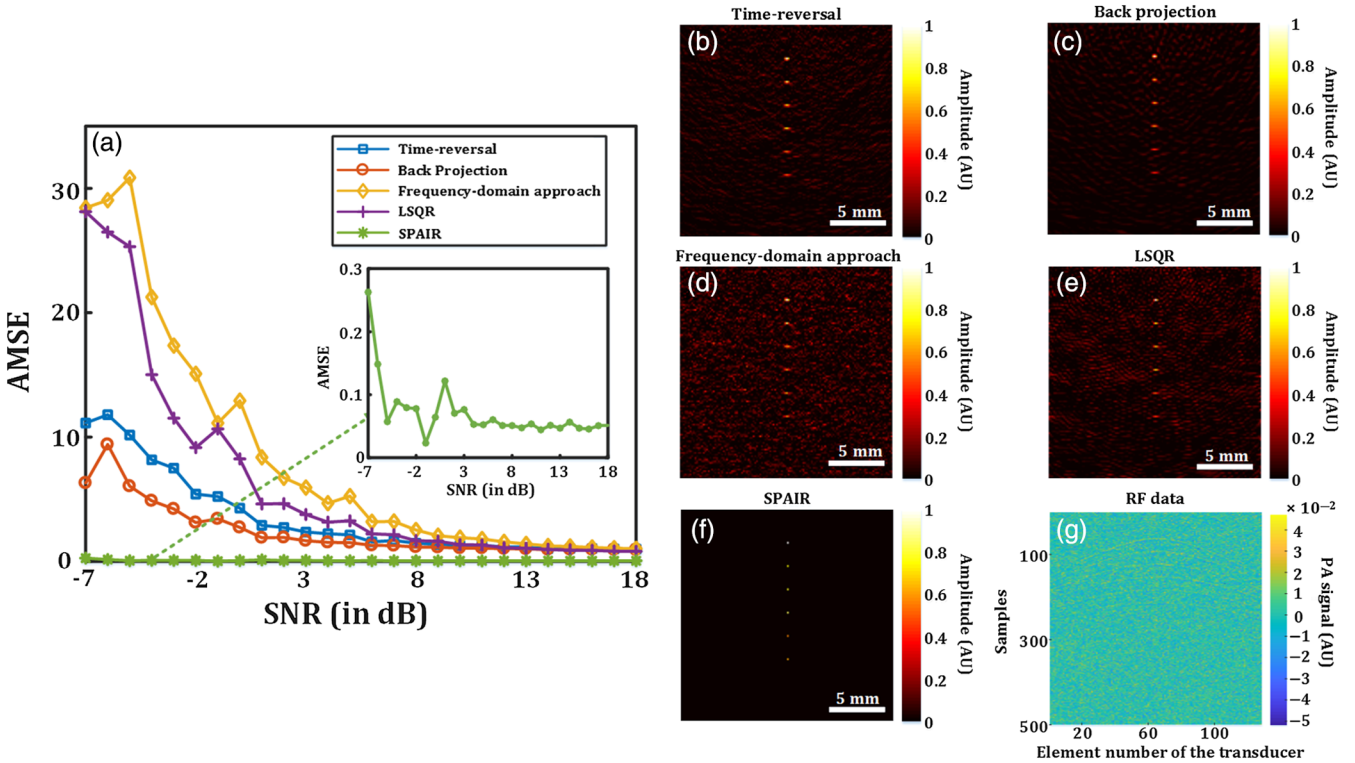

Fig. 3 The AMSE of the IPD from the RF data with different SNRs for time reversal (blue), back projection (red), frequency-domain approach (yellow), LSQR (purple), and SPAIR (green). The inset shows a zoomed-in view of the proposed method. (b) The reconstructed IPD image from time-reversal approach with −2-dB noise in the RF data, (c) the reconstructed IPD image from back projection approach with −2-dB noise in the RF data, (d) the reconstructed IPD image from frequency-domain approach with −2-dB noise in the RF data, (e) the reconstructed IPD image from LSQR with −2-dB noise in the RF data, (f) the reconstructed IPD image from SPAIR with −2-dB noise in the RF data, and (g) the corresponding noisy RF data with an SNR of −2-dB. The scale bar is 5 mm.

2. Section 3.2, 2nd paragraph, 4th sentence

Original:

Figures 3(b)–3(f) show the reconstructed IPD images from the five approaches with −5-dB noise in the RF data.

Corrected:

Figures 3(b)–3(f) show the reconstructed IPD images from the five approaches with −2-dB noise in the RF data.

3. Figure 4 caption.

Original:

Fig. 4 Simulation on the Shepp–Logan phantom using an ultrasound transducer with 6-MHz center frequency and 4.8-MHz bandwidth. (a) Ground truth of the Shepp–Logan phantom, (b) reconstructed IPD image from back projection, (c) reconstructed IPD image from the time-reversal approach, (d) reconstructed IPD image from the frequency-domain approach, (e) reconstructed IPD image from the LSQR, (f) reconstructed IPD image from SPAIR, (g) the corresponding noisy RF data with an SNR of 15 dB, and (h) line plots of the white dotted line in (a) for all the reconstructed IPD images and the ground truth. The scale bar is 5 mm.

Corrected:

Fig. 4 Simulation on the Shepp–Logan phantom using an ultrasound transducer with 6-MHz center frequency and 4.8-MHz bandwidth. (a) Ground truth of the Shepp–Logan phantom, (b) reconstructed IPD image from back projection, (c) reconstructed IPD image from the time-reversal approach, (d) reconstructed IPD image from the frequency-domain approach, (e) reconstructed IPD image from the LSQR, (f) reconstructed IPD image from SPAIR, (g) the corresponding noisy RF data with an SNR of 18 dB, and (h) line plots of the white dotted line in (a) for all the reconstructed IPD images and the ground truth. The scale bar is 5 mm.

This article was corrected online on 13 August 2019.