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Abstract: The characterization of the spatial and frequency response of acoustic detectors is important for enabling accurate optoacoustic imaging. In this work, we developed a hybrid method for the characterization of the spatially dependent response of ultrasound detectors. The method is based on the experimental determination of the receive-mode electrical impulse response (EIR) of the sensor, which is subsequently convolved with the corresponding spatial impulse response (SIR), computed numerically. The hybrid method is shown to have superior performance over purely experimental techniques in terms of accurate determination of the spatial and temporal responses of ultrasonic detectors, in high as well as low sensitivity regions of the sensor.
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