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Realizing broadband sub-wavelength focusing and high intensity enhancement by space-time synergetic modulated acoustic prison

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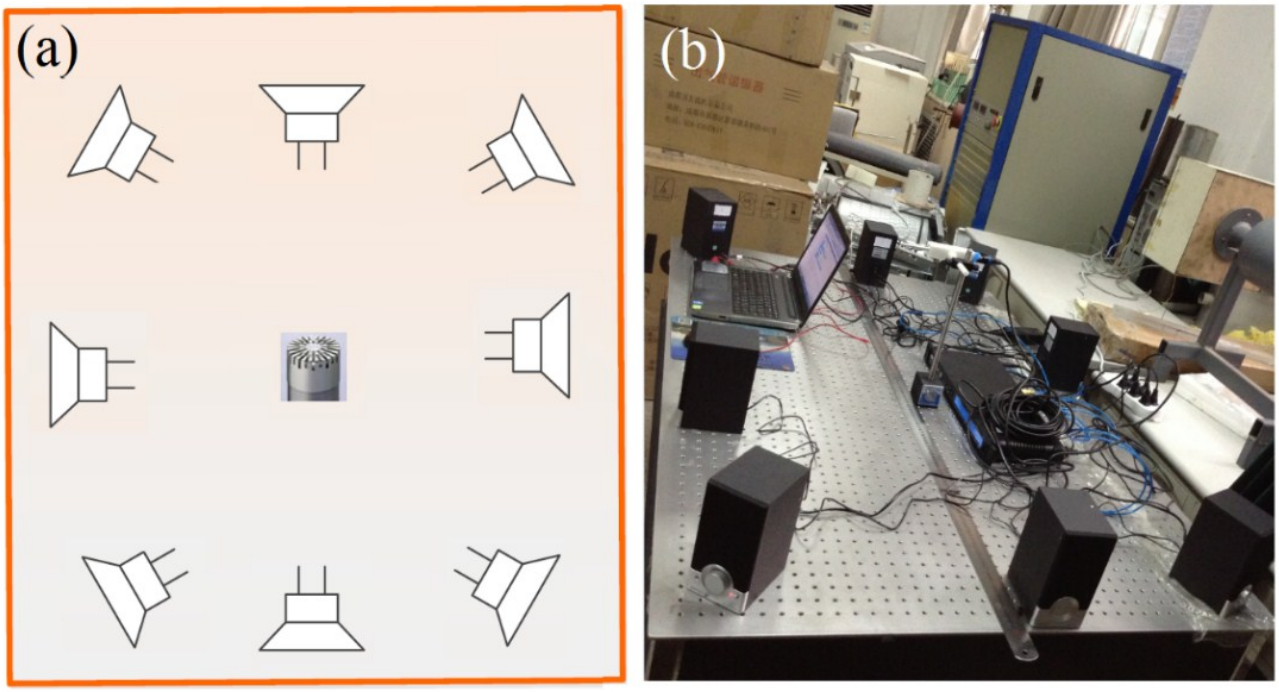
Supplementary Figures



Supplementary Fig. 1 (a) Schematic diagram of time-reversal focusing in a reverberant room with 8 speakers and a microphone; (b) setup photograph of the time-reversal focus experiment.

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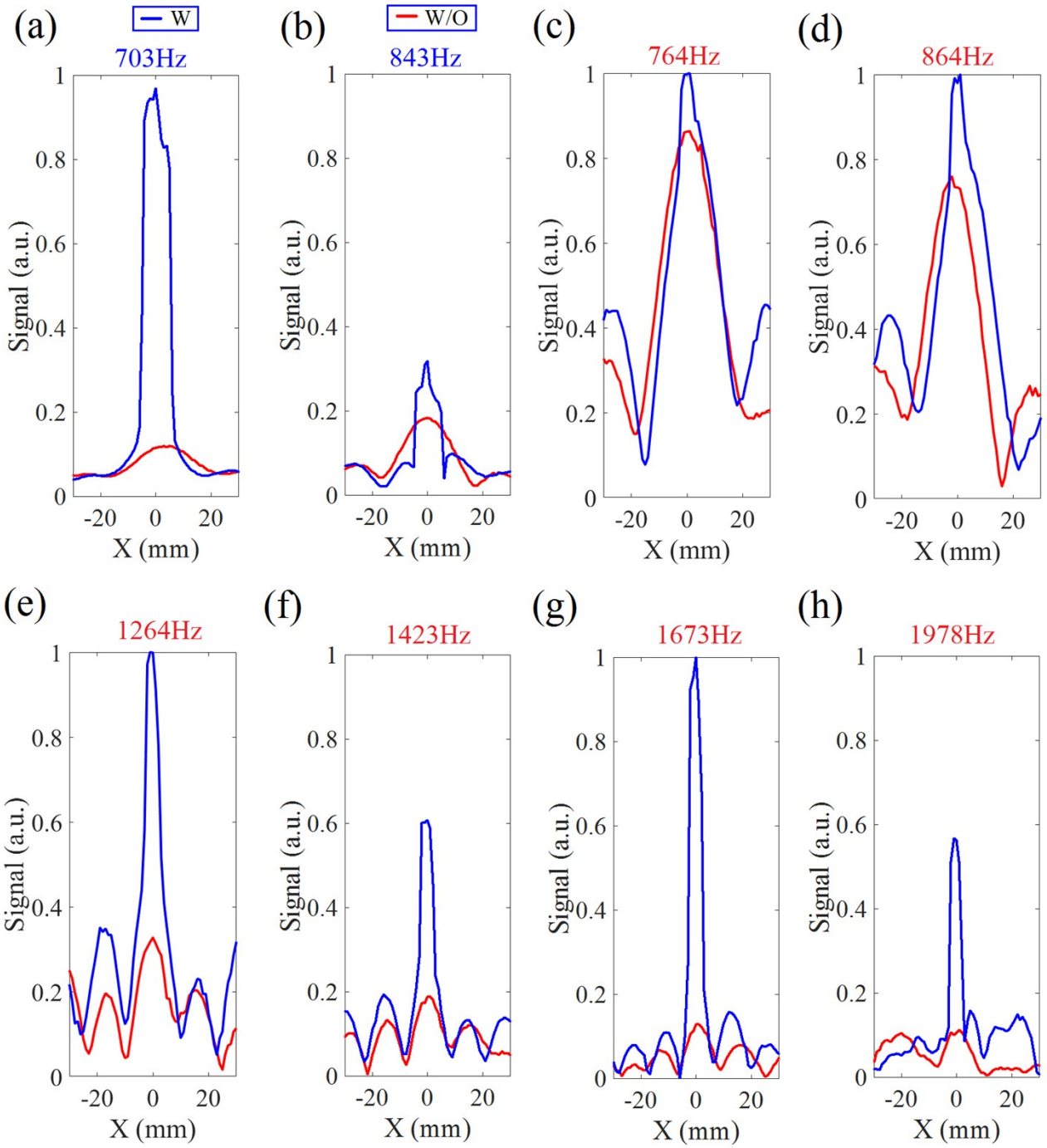
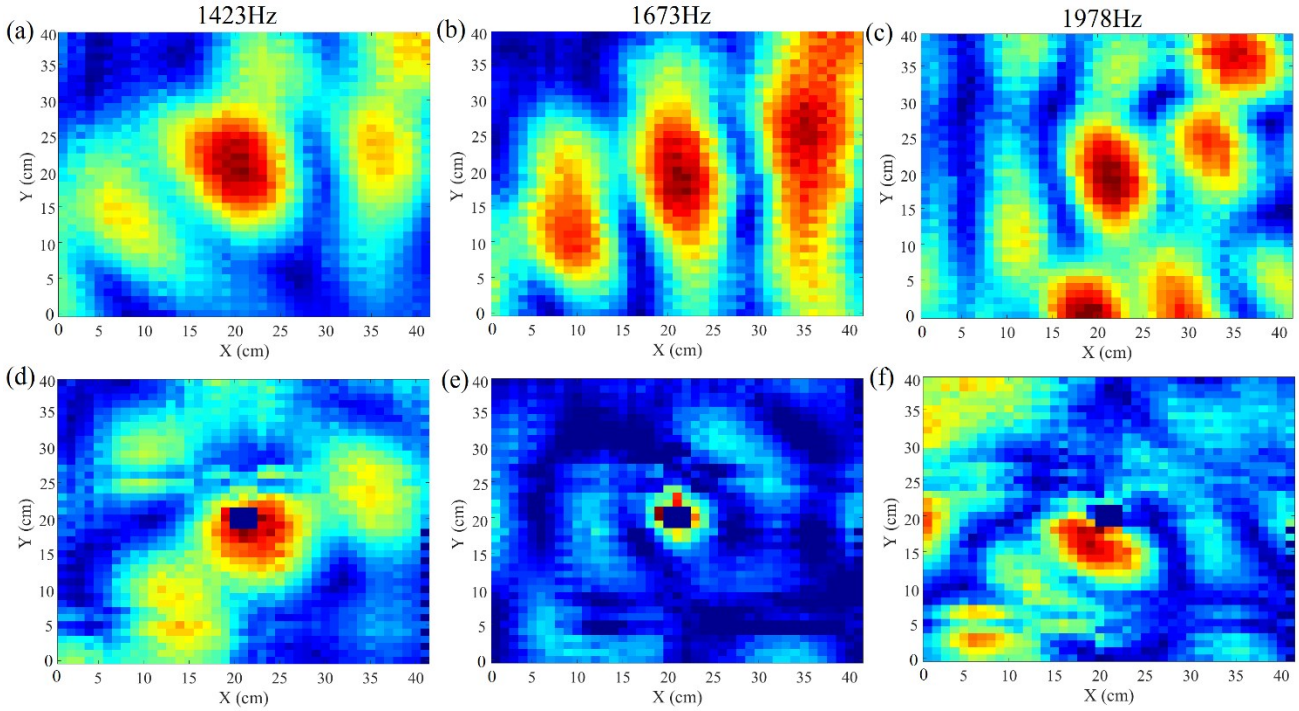
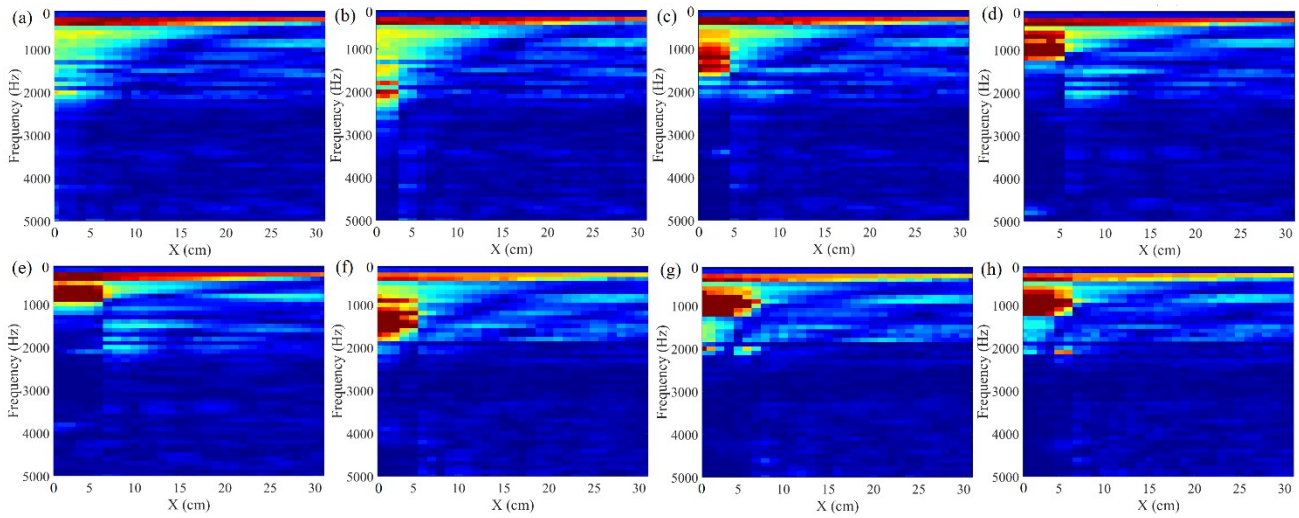


Supplementary Fig. 2 The focusing effect of the spectrum peaks at (a) 703 Hz and (b) 843 Hz for the group that adds a prison with side length of 100 mm; the results at (c) 764 Hz, (d) 864 Hz, (e) 1264 Hz, (f) 1423 Hz, (g) 1673 Hz and (h) 1978 Hz for the group that adds a prison with side length of 50 mm. It can be seen that the width of the main peak does not change with frequency, demonstrating a stable broadband sub-wavelength focusing feature.



Supplementary Figure 3. The planar sound distributions of the control group (upper row) at (a) 1423 Hz, (b) 1673 Hz and (c) 1978 Hz; those of the group that adding an acoustic prison with side length of 50 mm in the focus center at (d) 1423 Hz, (e) 1673 Hz and (f) 1978 Hz.



Supplementary Figure 4. The planar focusing measurement results of (a) Group-1, (b) Group-2, (c) Group-3, (d) Group-4, (e) Group-5, (f) Group-6, (g) Group-7, and (h) Group-8 in the frequency range of 100-5000 Hz.