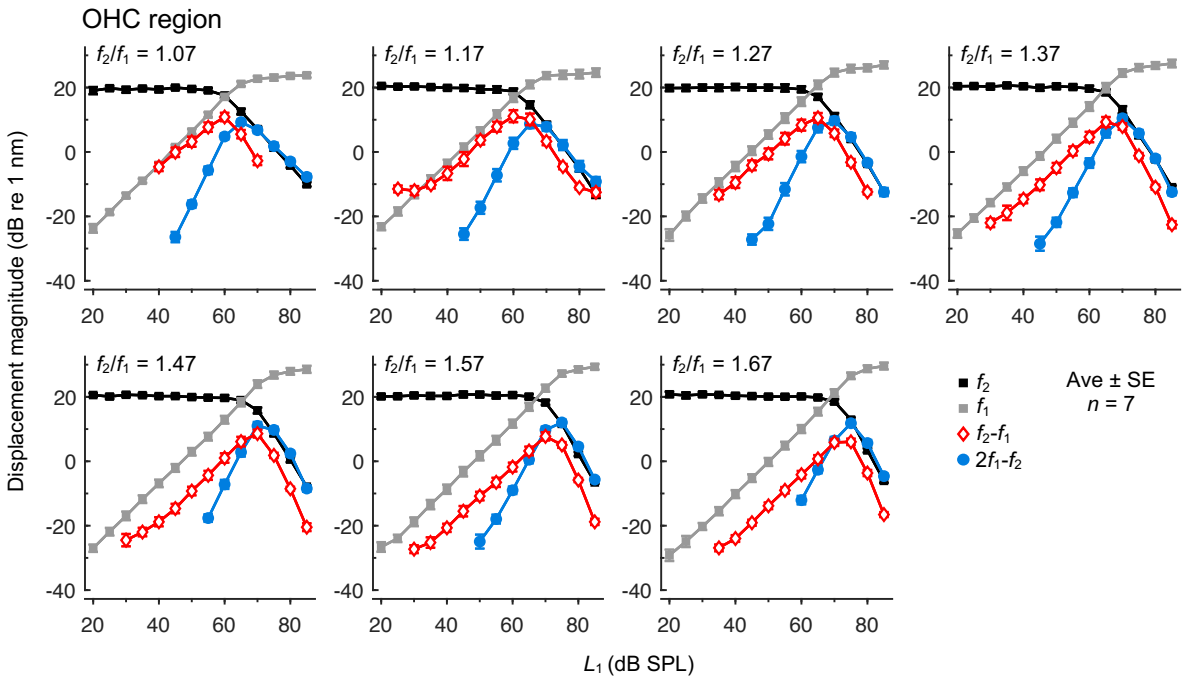
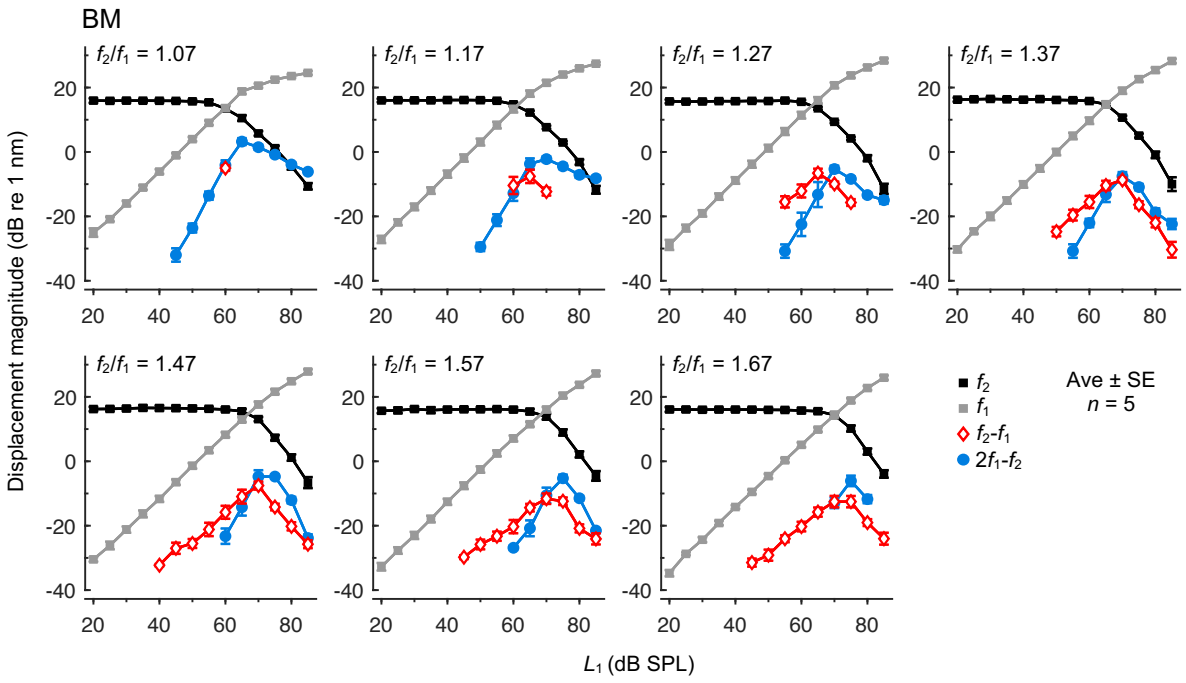
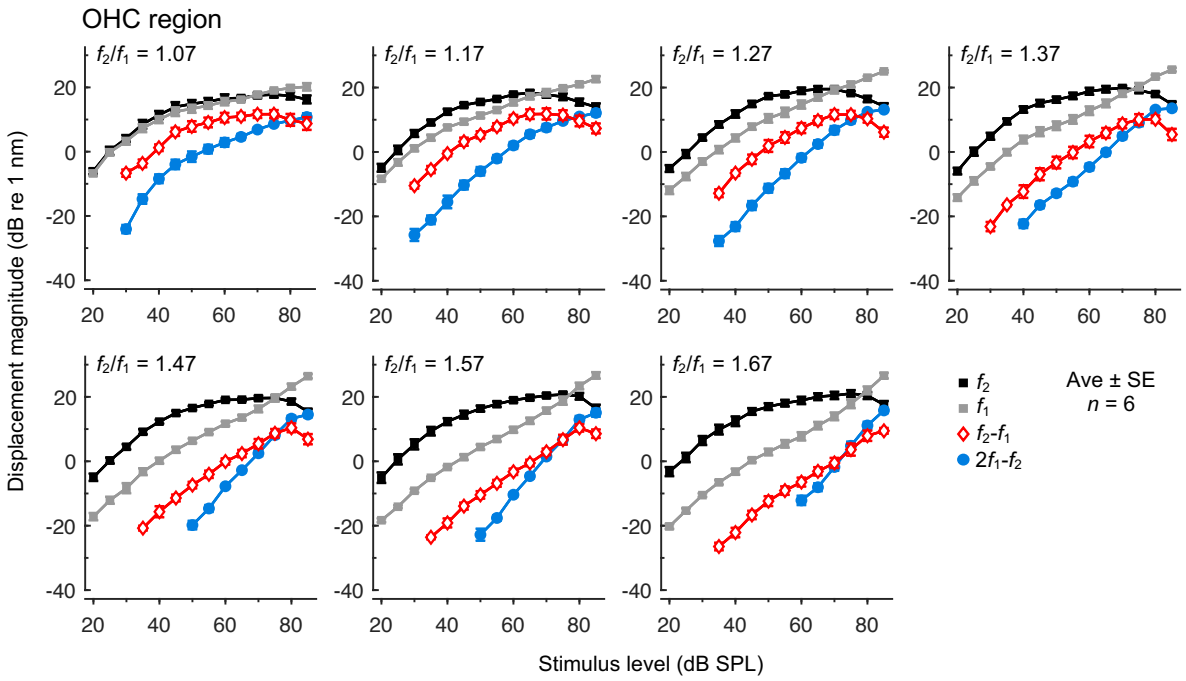
Supplementary figures for Dewey (2022) "Cubic and quadratic distortion products in vibrations of the mouse cochlear apex", JASA EL



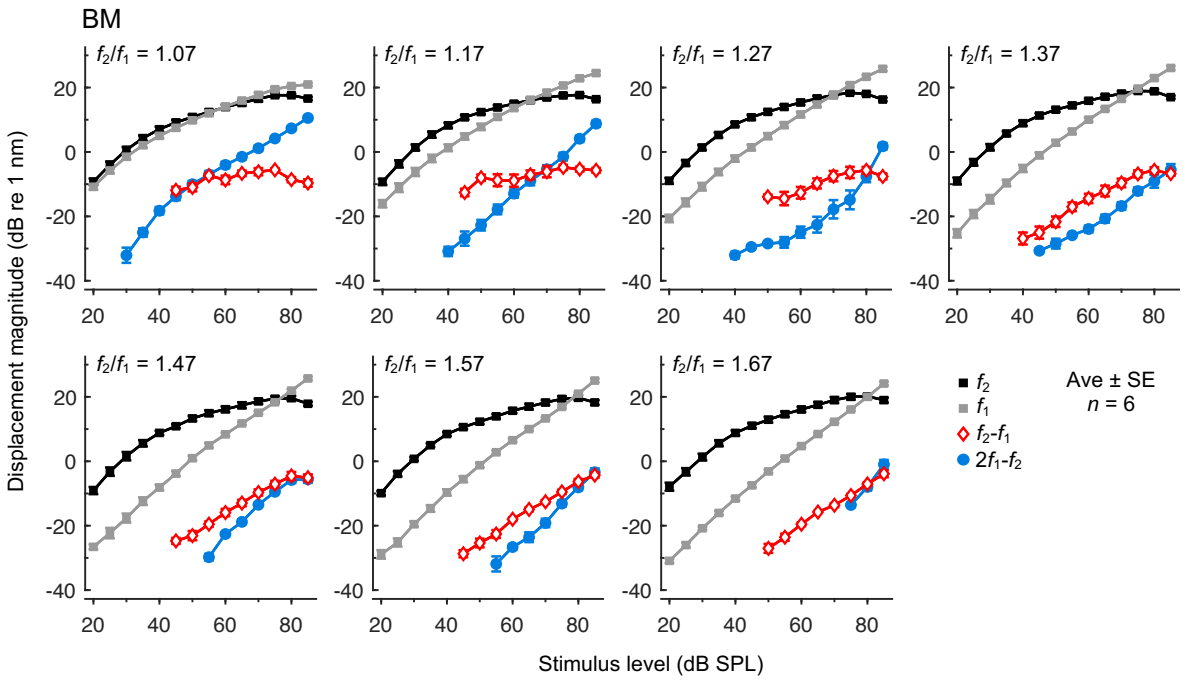
Supplementary Figure 1. Average OHC region displacement magnitudes for the fixed-L_2, varied-L_1 stimulus paradigm (with f_2 = 9 kHz, L_2 = 60 dB SPL; n = 7). Displacements are shown for f_2, f_1, f_2-f_1, and $2f_1$-f_2 as a function of L_1, for all f_2/f_1 ratios examined (1.07-1.67 in 0.1 steps). Averages only include data exceeding the measurement noise floor and are only shown when such clean data were available in at least three mice. Error bars indicate ±1 SE, though are often smaller than the symbols. Individual data from one mouse are shown in Fig. 2(e)-(f) of the main manuscript.



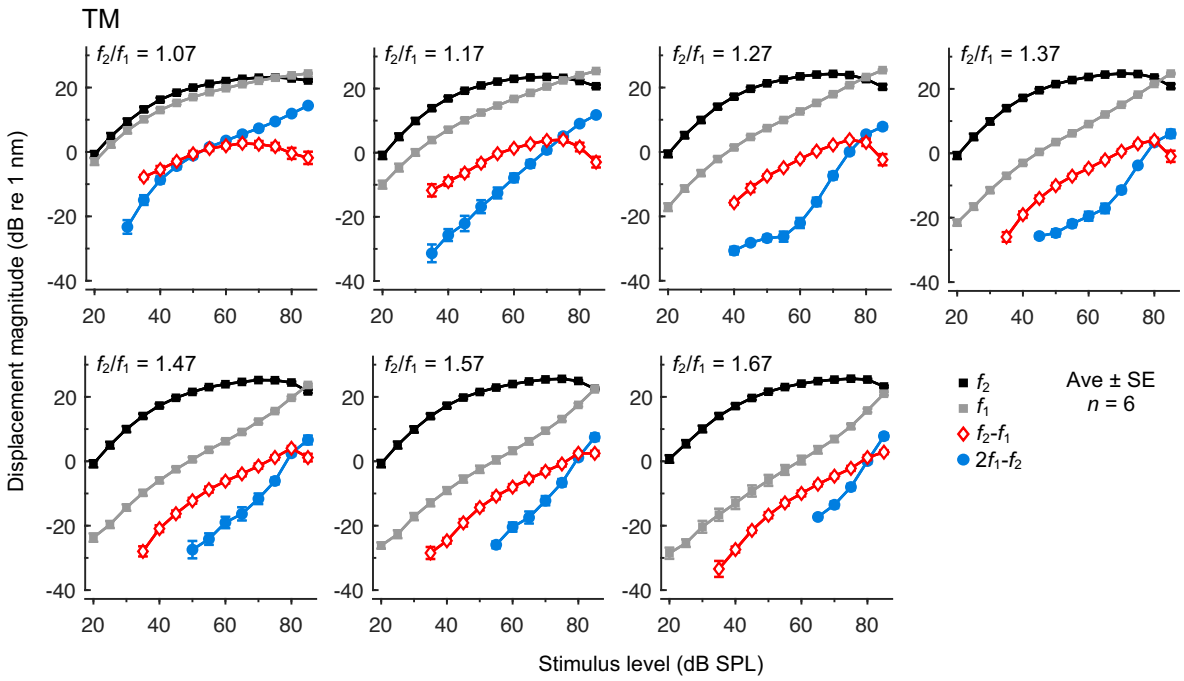
Supplementary Figure 2. Average BM displacement magnitudes for the fixed-L_2, varied-L_1 stimulus paradigm (with f_2 = 9 kHz, L_2 = 60 dB SPL; n = 5). Averaging and plotting conventions are as in Supplementary Figure 1. These data were collected primarily to characterize BM displacements at f_2 and f_1 so that they could be used as inputs to the Boltzmann model (see Fig. 2(g) of the main manuscript). Due to the higher measurement noise at low frequencies, few data points exceeded the noise floor for f_2-f_1 at small ratios (for f_2/f_1 = 1.07, f_2-f_1 = 0.59 kHz) or $2f_1$-f_2 at larger ratios (at f_2/f_1 = 1.67, $2f_1$-f_2 = 1.78 kHz).



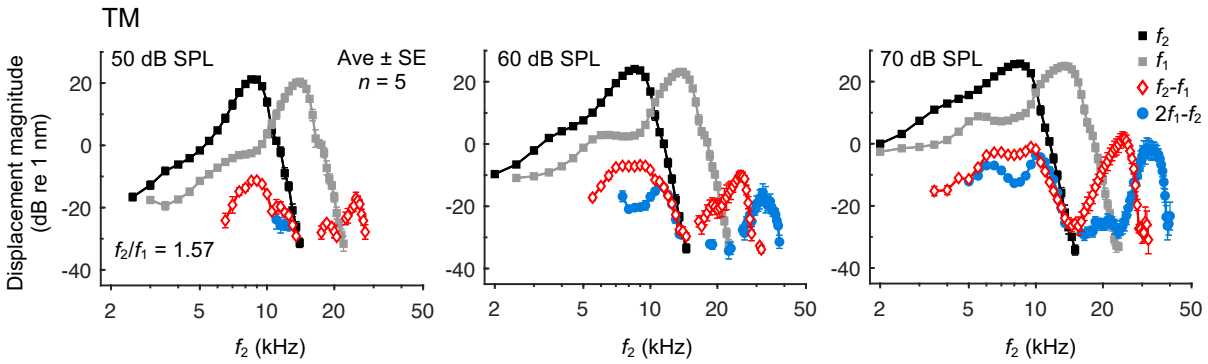
Supplementary Figure 3. Average OHC region displacement magnitudes for the equal-level stimulus paradigm (with f_2 = 9 kHz; n = 6). Averaging and plotting conventions are as in Supplementary Figure 1. Average data for f_2/f_1 ratios of 1.07 and 1.57 are included in Fig. 3(a)-(b) of the main manuscript.



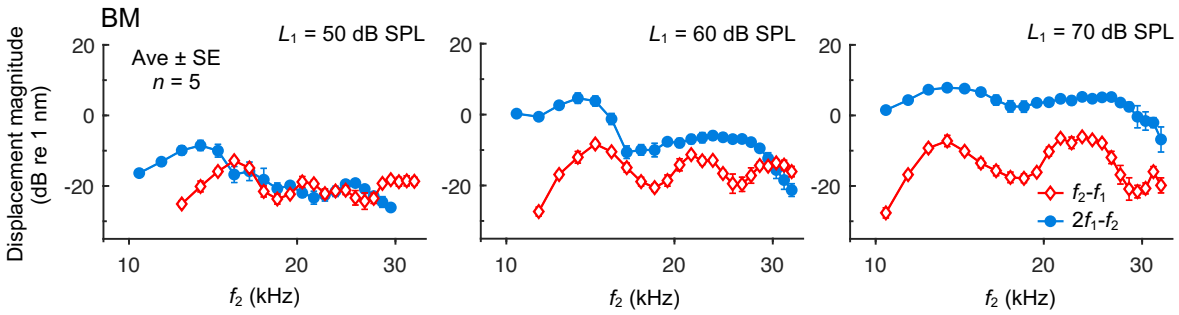
Supplementary Figure 4. Average BM displacement magnitudes for the equal-level stimulus paradigm (with f_2 = 9 kHz; n = 6). Averaging and plotting conventions are as in Supplementary Figure 1. Average data for f_2/f_1 ratios of 1.07 and 1.57 are included in Fig. 3(c)-(d) of the main manuscript.



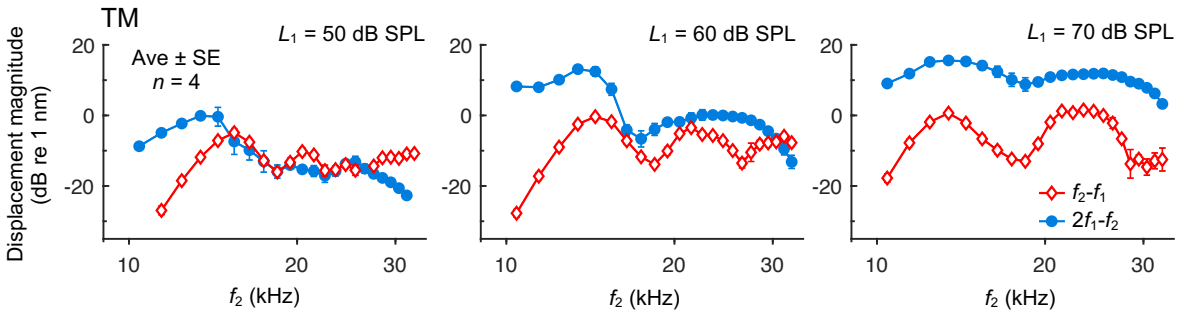
Supplementary Figure 5. Average TM displacement magnitudes for the equal-level stimulus paradigm (with f_2 = 9 kHz; n = 6). Averaging and plotting conventions are as in Supplementary Figure 1. Average data for f_2/f_1 ratios of 1.07 and 1.57 are included in Fig. 3(e)-(f) of the main manuscript.



Supplementary Figure 6. Average TM displacement magnitudes for the swept-f_2, fixed-ratio stimulus paradigm (with $f_2/f_1 = 1.57$, $L_1 = L_2 = 50$-70 dB SPL; $n = 5$). Displacements are plotted vs. the f_2 frequency, with the stimulus levels indicated at the top of each panel. Averaging and plotting conventions are as in Supplementary Figure 1. For 50 dB SPL stimuli, the $2f_1$-f_2 DP was only detectable for a narrow range of frequencies above the CF. Individual data obtained using 70 dB SPL stimuli for one mouse are shown in Fig. 4(a)-(c) of the main manuscript.



Supplementary Figure 7. Average BM displacement magnitudes for the swept-f_2, fixed DP frequency stimulus paradigm (L_2= 60 dB SPL, L_1 = 30-80 dB SPL; n = 5). Displacements are plotted vs. the f_2 frequency for three L_1 values (indicated at the top of each panel). Averaging and plotting conventions are as in Supplementary Figure 1. Individual data from one mouse for two f_2 frequencies (and plotted vs. L_1) are shown in Fig. 4(d)-(e) of the main manuscript. Average maximum DP magnitudes are shown in Fig. 4(f) of the main manuscript.



Supplementary Figure 8. Average TM displacement magnitudes for the swept-f_2, fixed DP frequency stimulus paradigm (L_2= 60 dB SPL, L_1 = 30-80 dB SPL; n = 4). Displacements are plotted vs. the f_2 frequency for three L_1 values (indicated at the top of each panel). Averaging and plotting conventions are as in Supplementary Figure 1.