

Demonstration 20. Virtual Pitch (0:41)

A complex tone consisting of 10 harmonics of 200 Hz having equal amplitude is presented, first with all harmonics, then without the fundamental, then without the two lowest harmonics, etc. Low-frequency noise (300-Hz lowpass, -10 dB) is included to mask a 200-Hz difference tone that might be generated due to distortion in playback equipment.

Commentary

"You will hear a complex tone with 10 harmonics, first complete and then with the lower harmonics successively removed. Does the pitch of the complex change? The demonstration is repeated once."

References

- A.J.M.Houtsma and J.L.Goldstein (1972), "The central origin of the pitch of complex tones: evidence from musical interval recognition," *J. Acoust. Soc. Am.* **51**, 520-529.
- J.F.Schouten (1940), "The perception of subjective tones," *Proc. Kon. Ned. Akad. Wetenschap* **41**, 1086-1093.
- A.Sebeck (1841), "Beobachtungen über einige Bedingungen der Entstehung von Tönen," *Ann. Phys. Chem.* **59**, 417-436.