

# FUN WITH BINAURAL HEARING

## DEMOS

Download the mp3 files. You will need to listen using a pair of earphones in order to appreciate the effects to be demonstrated. An iPod or other personal listening device should work just fine. If you are using a computer, it would be best to turn off any sound "enhancement" effects that might be active. *It will be necessary to bring your listening device (loaded with the files) and earphones to class with you.*

**ITDs500Hz:** You will hear a sequence of eleven *low-frequency* noise pulses that should march across your head from left to right. The movement is generated by interaural *time* differences (ITDs). That is, there is no change in the levels of the sounds at each ear. You can confirm this for yourself by playing the sequence while listening to only one earphone at a time.

**ITDs4kHz:** You will hear a sequence of eleven *high-frequency* noise pulses. The same ITDs are applied as in the example above. What do you hear?

**IIDs500Hz:** You will hear a sequence of eleven *low-frequency* noise pulses that should march across your head from left to right. The movement is generated by interaural *intensive* differences (IIDs).

**IIDs4kHz:** You will hear a sequence of eleven *high-frequency* noise pulses. The same IIDs are applied as in the example above. What do you hear?

**Binaural Beats:** A *500-Hz* tone is played in one ear; a *501-Hz*-tone is played in the other. What do you hear?

**GausTranITD500** Gaussian noises and transposed noises, all centered at 4 kHz and containing a 500  $\mu$ s ITD, are alternated.

**MLD:** You will hear three pulses of broadband noise followed by three pulses of broadband noise with a 500-Hz tonal signal added. The entire sequence then repeats. Do you hear the tone? Now, replay the file while listening to *only* the left ear. Then, replay the file while listening to *only* the right ear. Where is the tone?!