

ACOUSTICS2008/2023
A comparison between interaural level difference and interaural correlation uncertainty on binaural signal detection thresholds

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Experiments were performed to study the effect of the presence of interaural level differences (ILDs) on binaural detection abilities. The subjects had to detect an interaurally out-of-phase 500-Hz tone in the presence of a diotic noise masker that had a bandwidth of either 1 kHz, 100 Hz or 10 Hz. Experiments were conducted for both frozen and running-noise conditions and ILDs up to 30 dB were applied to both signal and masker. The results indicate an ILD dependency that varies with the bandwidth of the masker. Furthermore, with increasing ILDs, the difference in detection thresholds between frozen and running-noise conditions was larger for narrow-band noise conditions. Similar observations were made by previous investigations on the influence of reduced masker correlation. Both data sets are compared in order to find possible similarities in the mechanisms involved in the detection tasks.