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Sensitivity in the Auditory midbrain to dynamic interaural time differences in dichotic broadband noise

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Recent studies have provided evidence that binaural neurons at the level of the midbrain (inferior culliculus) show a pronounced sensitivity to dynamical interaural time differences (ITDs). The stimuli in these studies were tonal and the ITD manipulation was oscillatory.. We studied dynamic sensitivity to a broadband Gaussian noise that made a linear sweep in ITD, with variable direction and speed. In the majority of cells the instantaneous firing rate tracked the peaks and troughs of the static ITD tuning curve, even at unphysiologically high speeds. The absolute response level often changed with speed, but effects of direction were minimal