

Comments

Comment by Carlyon:

I wonder whether the maximal sensitivity to FM coherence when the second tone is slightly above BF (and above the 1st tone) could be due to the combination product $2f_1-f_2$. This would be frequency modulated over a wide range for incoherent FM, and might fall within the unit's tuning curve. This could be tested by presenting the stimuli at a very low level.

Reply:

Cochlear nonlinearities such as distortion products and two-tone suppression, as well as harmonic distortion in the stimulus delivery system, were a consideration in the design of these experiments, which is why the excitatory and inhibitory tones were presented at the lowest levels that would elicit the desired effects. Because cortical neurons exhibit a range of thresholds, the best way to address this problem may be with FM data of a sufficient number of low-threshold neurons stimulated at low sound levels. If these neurons also show an FM coherence sensitivity shift to higher frequencies, then a distortion product would be unlikely to explain the phenomenon. One might also try narrow bands of noise.