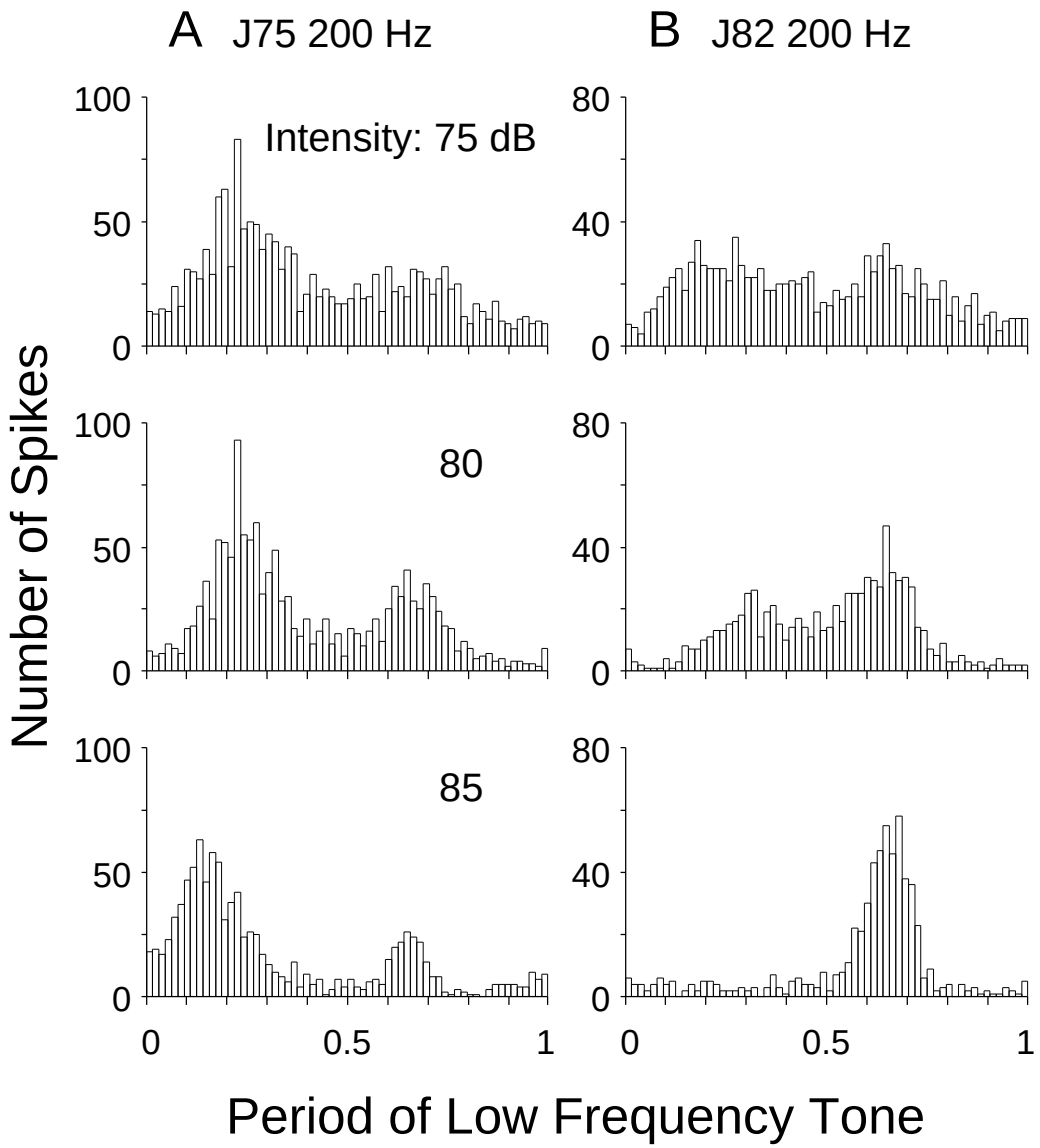
Appendix A

The following briefly describes the Rayleigh test. Let $\{\theta n\}$ be a random sample from a population with probability density function (pdf) $f(\theta)$. We form the null hypothesis H_0: $f(\theta) = 1/2\pi$, $\theta \subset [0, 2\pi]$ (i.e., θn is uniformly distributed) and the alternative H_1: $f(\theta) = g(\theta)$, where $g(\theta)$ is the pdf corresponding to the von Mises distribution $M(\mu_0, k)$. A Rayleigh test is then constructed to test H_0 against H_1. Under these assumptions, it is shown (Mardia, 1972) that the likelihood ratio statistic is a monotonically decreasing function of the mean resultant length (or vector strength), i.e., the smaller the vector strength, the more likely the sample is uniformly distributed. Based on the critical values given in Appendix 2.5 of Mardia (1972), a Rayleigh coefficient, which is the upper bound of the probability that hypothesis H_0 is true, is calculated for each period histogram.

Appendix B



appendxb.ps Appendix B

The two-tone responses from a pair of fibers for which the responses to the suppressor tone (200 Hz) alone has been shown in Fig. I-7. The CF tone (4800 Hz) was presented at 25 (fiber J75) and 22 dB SPL (fiber J82) respectively. Both fibers showed similar suppression patterns at 75 and 85 dB SPL. At 85 dB SPL, the SUP-alone responses contribute large portions of the two-tone responses. Notice that the two-tone analysis window has twice the length of the SUP-alone analysis window (see Chapter 2), thus 100 spikes in this figure represents the same discharge rate as 50 spikes in Fig. I-7 does.

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Yidao Cai 蔡 依 道

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