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### Short-term memory for temporal envelopes

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Short-term memory for the modulation frequency and intensity of sinusoidally amplitude-modulated (SAM) white noises was investigated in forced-choice discrimination experiments conducted with 4 listeners. The two stimuli presented on each trial lasted about 1.25 s and were separated by a variable delay D. Modulation frequency discrimination was assessed for an average frequency value of 8 Hz, with a fixed modulation depth of either 12 % or 100 %. Intensity discrimination was assessed for an average level of 75 dB SPL, using a modulation frequency of 8 Hz and a 100-% depth. In each case, a roving procedure was employed in order to minimize the influence of context coding. Initially, frequency and intensity discrimination thresholds [ $P(C)=0.75$ ] were measured while D was fixed at 0.25 s. The corresponding physical differences (in % or dB) were then constantly presented at 6 values of D: 0.25, 0.5, 1, 2, 4, or 8 s. For both intensity and frequency discrimination, the decline of sensitivity ( $d'$ ) as a function of D was quite slow. For frequency discrimination, decreasing depth from 100 to 12 % did not have a marked effect on the decline of  $d'$  as a function of D, although this degraded the initial discrimination threshold by a factor of about 2. Taken together, these results suggest that there is little information loss in the short-term memory representation of simple temporal envelopes. Moreover, the data concerning frequency discrimination appear to be inconsistent with the model of perceptual memory proposed by Kinchla & Smyzer (1967).

*The complete document was not available at the publication time. It has been replaced by the submitted abstract.*