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**Temporal suppression and augmentation of click-evoked  
otoacoustic emissions**

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This study investigates and models temporal suppression of click-evoked otoacoustic emissions (CEOAEs). This suppression-effect is created when a suppressor-click is presented close in time to a test-click. The analysis was carried out for short time-frames of short- and long-latency CEOAEs. The latter is defined as a CEOAE with duration greater than 20 ms, typically observed for test subjects with spontaneous otoacoustic emissions (SOAEs). Previous studies have tended to exclude these test subjects but they are incorporated here. The results from six exemplary subjects demonstrate that temporal suppression is present in all CEOAEs for inter-click intervals (ICIs) less than 8 ms. The long-latency CEOAEs showed augmentation (i.e., negative suppression) for ICIs of 6-7 ms which was not reported for the short-latency CEOAE at these ICIs. A phenomenological approach is adopted here to explain both temporal suppression and augmentation of CEOAEs. Recently, a feedback automatic gain control (AGC) system has been used to model CEOAE-suppression. However, this system cannot account for augmentation and therefore another, dynamic nonlinear model was developed. Suppression and augmentation were modeled phenomenologically using compression or expansion of the system output. This was obtained by shifting the operating-point on the input/output-characteristic in relation to the ICI.