

[Home](#) > [Vol 22 \(2006\)](#) > [Florentine](#)

TO HONOR STEVENS AND REPEAL HIS LAW (FOR THE AUDITORY STSTEM)

Mary Florentine, Michael Epstein

Abstract

The purpose of this paper is twofold: to honor S.S. Stevens and his efforts to further our understanding of the psychophysical law for loudness, and to propose a modification of this law in the light of converging evidence. In order to provide a simple, comprehensive law to fit the data from different modalities, second-order details in the loudness function were ignored. These "details" are essential for a full understanding of how loudness grows with increasing intensity. Data from a number of experiments reviewed in this paper indicate that a power function is only a rough approximation to the loudness growth function, because a power law does not fit the data at low and moderate levels. This paper proposes a new psychophysical law for loudness to better describe the data. A non-stationary point of inflection law [or an inflected exponential (INEX) law] appears to be the best description of currently available data.

Full Text:

[PDF](#)

Refbacks

- There are currently no refbacks.

[Journal Help](#)

USER

Username

Password

Remember me

NOTIFICATIONS

- [View](#)
- [Subscribe](#)

JOURNAL CONTENT

Search

Search Scope

All

Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)

FONT SIZE



INFORMATION

- [For Readers](#)
- [For Authors](#)
- [For Librarians](#)

Papers in honor of S. S. Stevens, ed. Moskowitz, H. R., Scharf, B. & Stevens, J. C.. Reidel. [SP].

Hood, D. C. & Finkelstein, M. A. (1979) Comparison of changes in sensitivity and sensation:

Implications for the response-intensity function of the human photopic system. *Journal of Experimental Psychology. Human Perception and Performance* 5:391-405. [aLEK, DL]. "To honor Stevens and repeal his law". *Proceedings of the International Society for Psychophysics*. 22. ^ Olson, Harry (1972). "The Measurement of Loudness". *Audio Magazine*. ^ As described in IEC 532, DIN 45631 and ASA/ANSI S3.4. A-weighting is applied to instrument-measured sound levels in effort to account for the relative loudness perceived by the human ear, as the ear is less sensitive to low audio frequencies. Decibel The decibel (dB) is a logarithmic unit that expresses the ratio of two values of a physical quantity, often power or intensity. One of these quantities is often a reference value and in this case the decibel expresses the absolute level of the physical quantity. Psychoacoustics Psychoacoustics is the scientific study of sound perception.