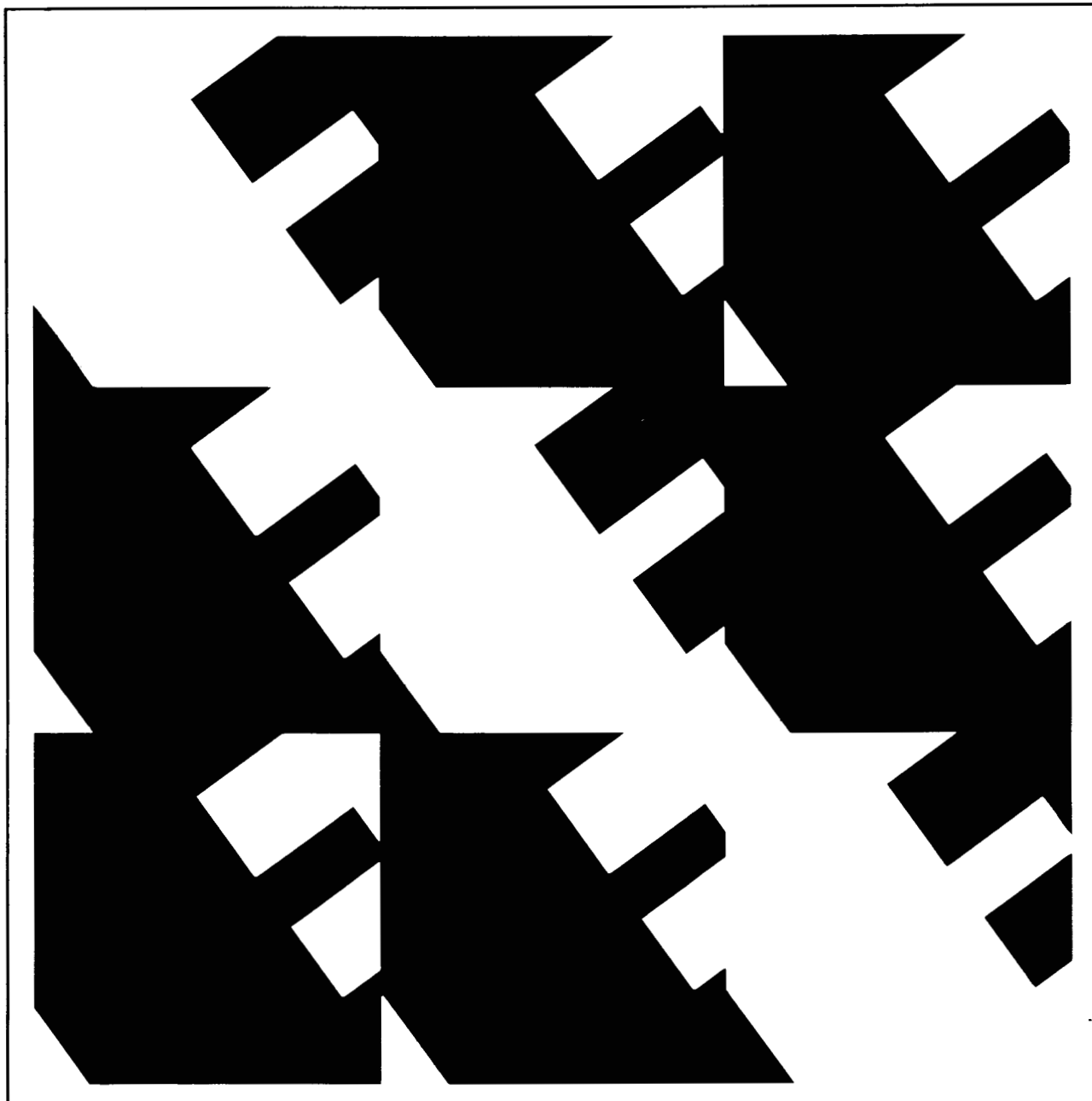


IEEE Standard Definitions of Physical Quantities for Fundamental Frequency and Time Metrology

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IEEE Power Engineering Society**

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Foreword

(This Foreword is not a part of IEEE Std 1139-1988, IEEE Standard Definitions of Physical Quantities for Fundamental Frequency and Time Metrology.)

Techniques to characterize and to measure the frequency and phase instabilities in frequency and time devices and in received radio signals are of fundamental importance to all manufacturers and users of frequency and time technology.

In 1964, within the Institute of Electrical and Electronics Engineers (IEEE) the Standards Coordinating Committee 14, and, in 1966, the Technical Committee on Frequency and Time were formed to prepare an IEEE standard on frequency stability. In 1969, these committees completed a document proposing definitions for measures of frequency and phase stabilities (Barnes, 1971, see Appendix C, [B11]). These recommended measures of instabilities in frequency generators have gained general acceptance among frequency and time users throughout the world.

In this standard, measures in the time and in the frequency domains are reviewed. In particular, the choice as to which domain is used depends on the application. However, the users are reminded that conversions using mathematical formulations (see Appendix A) from one domain to the other can present problems.

Most of the major manufacturers now specify instability characteristics of their standards in terms of these recommended measures. This standard thus defines and formalizes the general practice of more than a decade.

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