Flux Modulation in the Electrodynamic Loudspeaker

This paper discusses the effect of flux modulation in the electrodynamic loudspeaker with main focus on the effect on the force factor. A measurement setup to measure the AC flux modulation with static voice coil is explained and the measurements shows good consistency with FEA simulations. Measurements of the generated AC flux modulation shows, that eddy currents are the main source to magnetic losses in form of phase lag and amplitude changes. Use of a copper cap shows a decrease in flux modulation amplitude at the expense of increased power losses. Finally, simulations show that there is a high dependency between the generated AC flux modulation from the voice coil and the AC force factor change.

General information
State: Published
Organisations: Department of Electrical Engineering, Acoustic Technology, PointSource Acoustics
Contributors: Halvorsen, M., Tinggaard, C., Agerkvist, F. T.
Number of pages: 10
Publication date: 2015

Host publication information
Title of host publication: Proceedings of 138th International Audio Engineering Society (AES) Convention.
Publisher: Audio Engineering Society
Source: PublicationPreSubmission
Source-ID: 110964235
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015