Self-Oscillating 150 W Switch-Mode Amplifier Equipped with eGaN-FETs - DTU Orbit (08/11/2017)

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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.

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