

Lehrveranstaltungsankündigung

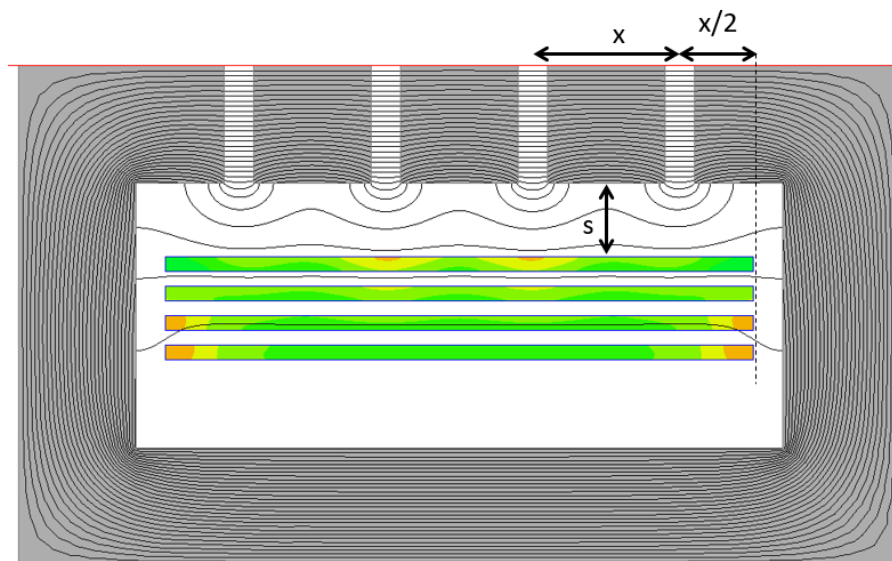
LV 431.314 Ausgewählte Themen der elektrischen Antriebstechnik 2

High-Frequency Magnetics Modeling and Design

(2SWS/3ECTS)

Content:

- Modeling and design of inductors and transformers for power electronics applications.
- High frequency winding loss effects: modeling, mitigation strategies, and design optimization.
- Laboratory exercises in construction, measurement, and modeling of high-frequency inductors and transformers.
- Losses in magnetic cores with non-sinusoidal waveforms.
- Strategies for MHz components.
- Wireless power transfer coils and structures.
- Applications to electric machines.



Quasi-distributed gap inductor.

Lecturer:

Prof. **Charles R. Sullivan** is a full professor at the Thayer School of Engineering, Dartmouth College, US, where he directs the Center for Power Management Integration, and is a 2019 Fulbright Visiting Professor at TU Graz. He has 30 years of experience in high-frequency magnetics design, holds 42 patents, and is a Fellow of the IEEE.

Prerequisites:

Fundamental knowledge of electromagnetism and electromagnetic circuits

Meeting Times (provisional, final schedule to be discussed with participants):

Mondays, 13:00-16:30h including coffee break:

11.03.19, 25.03.19, 08.04.19, 29.04.19, 13.05.19, 27.05.19, 03.06.19

Assessment:

One hour exam (40%), laboratory exercises (25%), project with final presentation (35%).