## *Objective:*

Acoustic analysis of an electric traction motor in an automotive setting

Implementation:

- *Simulation of electromagnetic forces employing a process designed by ARRK Engineering on the entire stator surface using the Flux electromagnetic analysis software*

- *Mapping of the transient, electromagnetic effects on a structural-mechanical FE model in the frequency range using ARRK Engineering's Theseus Transformer software*

- *Analytical simulation of the structural dynamics in the frequency range in Abaqus in order to calculate the structural response to electromagnetic stimuli*

- *Evaluation of the acoustic effects using effective radiated power (ERP)*

- *Analysis of the structural components with major impact on ERP, as well as the dominant structural eigenforms*

Abgestrahlte Schalleistung
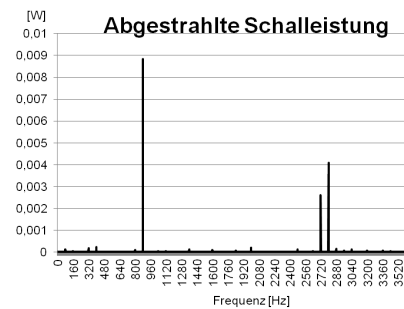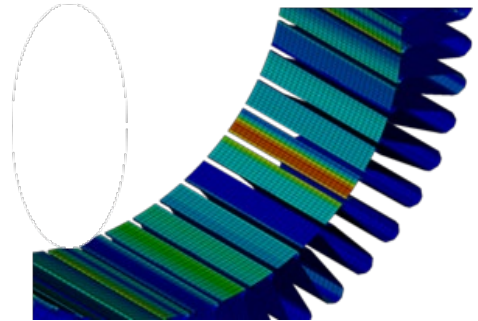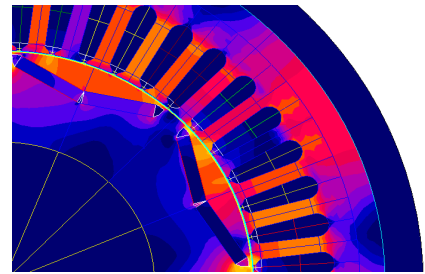
Result:

- *ERP of the electric motor, taking into account the structure of the housing and effects of cooling*
- *Identification of the key surfaces involved in ERP*
- *Identification of critical excitation frequencies in the target operating range*
- *Development and implementation of suggestions for optimization*

Powertrain development

Contact

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