References for Project "Design Optimization of an Electric Motor"

Instructor: Peter Gangl

[1] P. Christensen, A. Klarbring, "An Introduction to Structural Optimization", Springer Netherlands, 2009

[2] https://en.wikipedia.org/wiki/Reluctance_motor

[3] http://de.mathworks.com/help/pde/ug/magnetostatics.html

While [1] deals with the design optimization of mechanical structures, many of the described techniques can easily be transferred to the problem of optimizing electrical machines. In particular, we will be interested in optimizing the shape of certain parts of an electric motor by means of shape sensitivities. Therefore, Chapters 6 and 7 are of particular interest.
A quick introduction to the kind of motors we consider can be found in [2]
Furthermore, it would be advantageous if the participants could familiarize with the PDE toolbox in Matlab, in particular with the magnetostatic equation, see [3].