Optimizing dc-resistance of a foil wounded toroidal inductor combining matlab and comsol - DTU Orbit (09/11/2017)

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An optimization routine is presented to optimize the shape of a foil winding of a toroid inductor in terms of the DC resistance. MATLAB was used to define the geometry of the foil winding and COMSOL was used to import the geometry and create a 3D finite element model. The initial parameters, the execution and the results of the optimization routine were all managed from a graphical user interface and the feedback from COMSOL in terms of DC resistance was used to find and plot the optimal shape of the foil. The DC resistance was improvement by 31 % compared with previous work for a 10 turn toroidal inductor

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