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A fast and easy optimization tool for electric rotating machine design



Presented at the STAR Global Conference 2012

This presentation shows an optimization tool named BCS (Best Configuration Searcher) specifically developed to obtain in the optimized design of electric rotating machines. This tool works linked to the SPEED software.

BCS achieves the goal to give a first optimized design of the electric rotating machine in a very short time, starting from a first idea of the designer. It has a very intuitive interface, suitable for an easy and guided choice of optimization parameters, constraints and final objective.

It takes advantages of the SPEED computation time being able to give all data of a specific electric machine in much less than a second. The same data, such as torque, efficiency, power, winding inductances, magnetic induction, can be used as parameters for the optimization process.

BCS is based on an approach which follows the "Black Box" idea where the designer defines the optimization variables while the simulation tool, endowed with a suitable derivative free optimization algorithm named newCRS, directly provides the optimal design results.

The internal working between the simulation software, SPEED, and the optimization is automatically set, so no programming or scripting are requested to the user.

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