

Structure optimization in the novel inductor using a probabilistic algorithm

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Abstract

This project has been studying the 3D structure optimization technique for magnetic devices in order to design the novel inductor structure. In this study, the probabilistic algorithm and the Finite Element Method (FEM) has been used for optimizing magnetic devices. Generally, the huge resources of computer are necessary to analyze the electromagnetic field due to increasing the number of element in 3D-FEM. Hence, we have developed the 3D structure optimization technique using the high computational performance of the Earth Simulator.

This is the third year of this project. In this year, the experiment for optimization of inductor has been tried, and the effectiveness of our method has been valued.

Keywords: inductor, magnetic devices, structure optimization, probabilistic algorithm