Structure optimization in the novel inductor using a probabilistic algorithm

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Abstract

This project achieves the optimization technique for inductor design using the Earth Simulator (ES). It realizes the optimization design for 3D inductor architecture which satisfies the requirement of electric characteristics. In this project, the probabilistic algorithm has been used for the optimization.

Conventionally, it was difficult to achieve the 3D optimization, due to the increase of the calculation load. To solve the problem, this study uses the ES. Then we can achieve the novel inductor design effectively in a short time.

In this year, the effectiveness of the inductor optimization using the ES has been evaluated. In particular, the improvement effect of the program performance with a program tuning for the ES has been assessed.

Keywords： Inductor, Magnetic material, Nonlinear characteristics, Optimization, Probabilistic algorithm