

Talk announcement

Théodore Cherrière
(RICAM)

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On multi-material topology optimization of electrical machines

Topology optimization is an automated design method that determines the optimal material distribution. Initially prominent in mechanical engineering, it has since expanded into various physics domains, including electrical machines. One key advantage of this approach is that it does not necessitate prior knowledge of the geometry, thereby eliminating human designer biases. This presentation introduces a general multi-material framework capable of optimizing topology for complete electrical machines. It encompasses material property interpolation, regularization consistent with boundary conditions, and showcases applications across different machine types.