

Calibration of Numerical Models Based on Advanced Optimization With Penalization Techniques

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Abstract

A novel way of calibration (estimation of unknown material parameters and boundary conditions) of physical models in the domain of electroheat problems is presented, based on measured data and advanced optimization and penalization techniques (respecting uncertainties). The methodology is illustrated with an example whose results are discussed.

References

1. H. KIM AND C. KIM AND H. K. SEONG AND J. YOO. “Structural Optimization of a Magnetic Actuator With Simultaneous Consideration of Thermal and Magnetic Performances”. *IEEE Trans. Magn.* 51(12), ID 8208509, 2015.
2. M. FABBRI AND M. FORZAN AND S. LUPI AND A. MORANDI AND P. L. RIBANI. “Experimental and Numerical Analysis of DC Induction Heating of Aluminum Billets”. *IEEE Trans. Magn.* 45(1), pp. 192–200, 2009.