

Non-linear Model Order Reduction for electro-thermal analysis

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As technological challenges become more complex, the need for cutting-edge mathematical techniques becomes even more important. Mathematicians can play a significant role in fostering innovation and technological changes. A novel Dynamic Compact Thermal Model for non-linear and non-homogeneous heat diffusion problems, combining a Model Order Reduction technique with a tailored hyper-reduction procedure, shows how the mathematics underpinning efficient and accurate electro-thermal simulations are key in the design of new smart power products.