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Accelerated design of a conformal strongly coupled magnetic resonance wireless power transfer

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Abstract

A Conformal Strongly Coupled Magnetic Resonance (CSCMR) wireless power transfer (WPT) system is a small footprint technology suitable for applications such as small low power sensors and implantable medical devices. These applications require specific WPT systems with certain physical dimensions that complement the size of the device. The design of these systems can be complex and require intense computational resources and long simulation times to conceptualise the optimal WPT system. This paper discusses the system architecture for CSCMR-WPT model. A quicker mathematical analysis to estimate the optimal CSCMR-WPT resonator loops and source/load loops is shown. The results confirm that this method can lead to quicker conceptualisation of a WPT model.