Abstracts

An Optimal Excitation Method in Multi-Applicator Systems for Forming a Hot Zone Inside the Human Body

N. Morita, T. Hamasaki and N. Kumagai. "An Optimal Excitation Method in Multi-Applicator Systems for Forming a Hot Zone Inside the Human Body." 1986 Transactions on Microwave Theory and Techniques 34.5 (May 1986 [T-MTT] (Special Issue on Phased Arrays for Hyperthermia Treatment of Cancer)): 532-538.

A method is proposed for determining the excitation amplitude and phase of each applicator in electromagnetic multi-applicator systems for forming a narrow high temperature zone inside the human body. The principal advantage of this method for determining the optimal amplitudes and phases is its simplicity and reasonableness. The general principle is explained by using the example of an elliptical body region, heated by several line current sources placed outside the body. Numerical examples are presented for the case where a human abdominal region composed of muscular and spinal layers surrounded by a cooling water layer is excited by several line sources at 40.68 MHz.

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