

Optimal Excitation of Multiapplicator Systems for Deep Regional Hyperthermia

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A method is proposed for determining the excitation amplitudes and phases of the elements of electromagnetic multiapplicator systems for forming a hot zone around a deep-seated tumor. The general principle is applied to a two-dimensional problem of a piecewise homogeneous cylinder heated by an array of electric current filaments placed outside the cylinder. Numerical simulations are performed to check the effectiveness of the approach. The results demonstrate that using this optimization method, an improved specific absorption rate (SAR) distributions can be achieved.

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