# Abstracts

## Optimization of SAR Distributions in Liver and Lung Regions Irradiated by the H-Horn Annular Phased Array Hyperthermia System

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This paper discusses a new type of annular phased array system the H-horn APA. The phase and amplitude control of power deposition patterns for this system has been theoretically analyzed at a frequency of 200 MHz. The formulas for calculating the E field and SAR for this APA system have been derived, and can be applied to other types of APA systems. Models on computerized tomography (CT) scans from liver and lung regions have been used for predicting optimization of the E field and SAR patterns in the case of the relative phase and amplitude changes. It is shown that the technique of the phase and amplitude control of SAR patterns results in a more selective and effective heating of tumors situated eccentrically and deeply within the body. The APA hyperthermia system described in this paper shows great promise, and looks very useful for developing clinical applications.

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