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INFLUENCE OF WIRE GEOMETRY ON TEMPERATURE DISTRIBUTION IN HUMAN BODY DURING RF HYPERTHERMIA

ABSTRACT *A numerical model which is an example of local-regional RF hyperthermia is presented. Human body is surrounded by an elliptical wire with exciting current and the electromagnetic energy is concentrated within the tumor. The presented issue is therefore a coupling of the electromagnetic field and the temperature field. For simplification a two-dimensional model which is a cross section through the human body is adopted. Using the finite element method exciting current density in human body has been calculated, and then bioheat equation under transient-time condition has been resolved. Finally, the obtained simulation results for several wire configurations are presented.*

Keywords: *hyperthermia, bioheat equation, FEM.*