Abstracts

Multiangle Method for Temperature Measurement of Biological Tissues by Microwave Radiometry (Short Papers)

J. Montreuil and M. Nachman. "Multiangle Method for Temperature Measurement of Biological Tissues by Microwave Radiometry (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.7 (Jul. 1991 [T-MTT]): 1235-1239.

A new approach for deriving the temperature distribution in biological tissues by microwave radiometry is proposed. It consists in the measurement of the thermal radiation of the body, at a given frequency, as a function of the observation angle, for two mutually orthogonal polarizations. Theoretically, this method yields results comparable to those obtained with the multispectral method. In order to derive the relations between the body temperature and the emitted thermal signal, the biological body is modeled by a set of parallel planar layers, each characterized by constant permittivity and temperature.

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