# Abstracts

## Algorithm for retrieval of deep brain temperature in new-born infant from microwave radiometric data

*S. Mizushina, K. Maruyma, T. Sugiura, G.M.J. van Leeuwen, J.W. Hand, G. Marrocco, F. Bardati, A.D. Edwards, D. Azzopardi and D. Land. "Algorithm for retrieval of deep brain temperature in new-born infant from microwave radiometric data." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 1033-1036.*

Describes a technique of multi-frequency microwave radiometry that draws heavily on thermal modeling for non-invasive measurement of deep brain temperature in the new-born infant. A recent study has shown that the technique is feasible, but improvements in the temperature retrieval process seemed possible. Here, a new algorithm for the derivation of tissue temperature from brightness temperatures is presented that does just that, under the provision of accurate thermal modeling. Preliminary results of simulations show that the confidence interval, as produced by thermal noise, is 0.11/spl deg/C for the central brain temperature. If the conductivity of brain tissue is estimated wrong by 10%, this will result in an error of the retrieved central brain temperature of 0.5/spl deg/C.

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