Abstracts

Imaging of biomedical data using a multiplicative regularized contrast source inversion method

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In this paper, the recently developed multiplicative regularized contrast source inversion method is applied to microwave biomedical applications. The inversion method is fully iterative and avoids solving any forward problem in each iterative step. In this way, the inverse scattering problem can efficiently be solved. Moreover, the recently developed multiplicative regularizer allows us to apply the method blindly to experimental data. We demonstrate inversion from experimental data collected by a 2.33-GHz circular microwave scanner using a two-dimensional (2-D) TM polarization measurement setup. Further some results of a feasibility study of the present inversion method to the 2-D TE polarization and the full-vectorial three-dimensional measurement will be presented as well.

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