Recent results concerning electromagnetic imaging for small inhomogeneities

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Abstract

I shall give a review of some very general perturbation formulae (of a generalized Born-type) and corresponding direct numerical reconstruction algorithms (of a linear sampling nature) that in combination provide an extremely effective method to accurately image small inhomogeneities. Some emphasis will be placed on polarization effects, and "optimal" volume bounds. Time permitting I shall discuss issues related to "extreme aspect ratios" and "high frequency effects".