

Inverse scattering of dielectric cylinders by a cascaded TE-TM method

Cho-Ping Chou and Yean-Woei Kiang. "Inverse scattering of dielectric cylinders by a cascaded TE-TM method." 1999 *Transactions on Microwave Theory and Techniques* 47.10 (Oct. 1999 [T-MTT]): 1923-1930.

A novel approach for inverse scattering of dielectric objects is proposed. This reconstruction algorithm aims to synthesize individual TE and TM inverse scattering in order to decrease the effect of ill-posedness. The proposed synthesizing method has a cascade structure composed of TE and TM inverse scattering algorithms. Appropriate approaches are adopted in these two algorithms to take advantage of the physical difference between them. A diversity scheme of multiple incident views and receiving points is also incorporated. Numerical simulations are conducted to compare the proposed synthesizing method with two other methods using individual TE or TM information. Some advantages of the synthesizing method are also observed.

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