BOUNDARY VALUE PROBLEMS FOR THE ANISOTROPIC MAXWELL EQUATIONS IN LIPSCHITZ DOMAINS

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Boundary value problems for the time dependent, anisotropic Maxwell system are analyzed in a bounded, Lipschitz domain in $\mathbb{R}^3$. The permittivity ε and the permeability μ are parameters which determine the propagation of radiation in a material, and here are assumed to be 3×3 matrices depending on position. Solutions are obtained with nonzero boundary data assuming the material parameters are merely bounded and measurable. The interplay between the non-smoothness of the domain and the function spaces involved will be highlighted in this talk. Finally, I will discuss recent ongoing work which is an extension of these ideas to so-called bi-anisotropic materials.