
Elliptic regularity theory applied to time harmonic Maxwell's equations

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Abstract

In this talk I will show how the L^p theory for elliptic equations can be applied to study the regularity of solutions to time harmonic Maxwell's equations with anisotropic complex coefficients. In particular, the solutions are Hölder continuous provided that the coefficients are $W^{1,p}$ for some $p > 3$. This improves existing regularity estimates, where the minimum assumption was the Lipschitz continuity of the coefficients. Moreover, I shall show that this approach can be easily extended to the case with bi-anisotropic materials.

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