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Frank Jochmann* (jochmann@math.tu-berlin.de), Institut für Mathematik, TU-Berlin,
Strasse des 17. Juni 136, 10997 Berlin, Germany. *Mathematical models for the propagation of
electromagnetic waves in generally nonlinear magnetized and polarized media.*

This talk is concerned with the Maxwell-Bloch system, the anharmonic oscillator model and the Landau-Lifschitz equation coupled with Maxwell's equations describing the electromagnetic field in generally nonlinear polarizable or magnetized media. The main subject are the existence, uniqueness and asymptotic behavior of the solutions as well as certain small parameter limits in these models. In this talk some results related to the following articles will be presented.

F. Jochmann, J. Differential Equations 203 (2004), no. 2, 232–254

F. Jochmann, Archive Rat. Mech. Anal. 165 (2002) 1, 41-87

F. Jochmann, Discr. Cont. Dyn. Systems 9 (2003), 663-676.

F. Jochmann, SIAM J. Math. Anal., 34, (2002), 315-340 .

F. Jochmann, Asymptotic behavior of the electromagnetic field for a micromagnetism equation without exchange energy, SIAM J. Math. Anal., to appear.

J. L. Joly, G. Metivier, J. Rauch, Ann. Inst. Henry Poincare. 1, (2000), 307-340. (Received August 04, 2005)