Hickey Replies: The authors of the preceding Comment [1] correctly assert that the full spin orbital coupling Hamiltonian stated by Hickey et al. in a recent Letter [2] is Hermitian. The original article on which the Comment is based contained the same observation: “Note that, while neither spin-orbital term is Hermitian, the two terms taken together are Hermitian.” Let us recall the spin-orbital coupling. We import a Maxwell relation to write down the electric field curl, commensurate with the time varying magnetic induction. We have calculated it, as implied by the final equation of page 3 of our Letter. We conclude that a finite perturbation frequency is required—ω ≠ 0 (where ω corresponds to the Fourier component of the applied field perturbation) for precessional damping to take place, otherwise the system of spins (the magnetization) is in equilibrium with the field.

The dimensionless Gilbert damping tensor, which determines the intrinsic linewidth of FMR resonances, reduces to [2]:

\[
\hat{\alpha} = \frac{i e h \mu_0 M_s}{8 m_0^2 c^2} (1 + \frac{1}{\chi})^{-1},
\]

where the susceptibility was written without the longitudinal response and in a basis in which the Levi-Civita tensor is diagonal and the parameters in the above equation are given by [2].

This result confirms the empirically held picture that the damping, and hence the FMR linewidth scales linearly with frequency (without an intercept) as demonstrated by Urban et al. [4]. We agree with Widom et al. that, in the limit of static electric and magnetic fields, the spin-orbital coupling is Hermitian and has a vanishing second term. However, Widom et al. did not take into account that, when the magnetization varies in time, the second term cannot be neglected, and we believe that this gives rise to dynamical Gilbert damping.

M. C. Hickey*
Francis Bitter Magnet Laboratory
Massachusetts Institute of Technology
150 Albany Street, Cambridge, Massachusetts 02139, USA

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*mark_hickey@uml.edu