Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Time-resolved optical spectroscopy of the itinerant antiferromagnets $UMGa_5$ (M=Ni, Pt) EE MIN ELBERT CHIA, HAE JA LEE, MST-CINT, Los Alamos National Laboratory, ERIC BAUER, NAMJUNG HUR, MST-10, Los Alamos National Laboratory, RICHARD AVERITT, ANTOINETTE TAYLOR, MST-CINT, Los Alamos National Laboratory, JOHN SARRAO, MST-10, Los Alamos National Laboratory — We present time-resolved optical conductivity measurements of the itinerant antiferromagnets $UNiGa_5$ (T_N=85K) and $UPtGa_5$ (T_N=25K), as well as the parent material UGa_3, using a pump-probe technique. The relaxation time τ diverges near T_N, which we attribute to the opening of a spin gap. τ also diverges at the lowest temperatures, which is similar to that shown by the heavy fermion $YbAgCu_4$, but with no blocking of electron-phonon scattering within the DOS peak. The transient amplitude exhibits a sign change at T_N, whose temperature dependence is also consistent with the appearance of a spin gap. We will also attempt to analyze our data using the Rothwarf-Taylor model.

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Date submitted: 10 Jan 2006 Electronic form version 1.4