

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Impurity induced Knight shifts in 2D antiferromagnets SEBASTIAN EGGERT, University Kaiserslautern, Germany, FABRIZIO ANFUSO, Chalmers University, Gothenburg, Sweden — The local response to a uniform field around vacancies in the two-dimensional (2D) spin-1/2 Heisenberg antiferromagnet is determined by numerical quantum Monte Carlo simulations as a function of temperature. It is possible to separate the Knight shifts into uniform and staggered contributions on the lattice which are analyzed and understood in detail. The contributions show interesting long and short range behavior that may be of relevance in NMR and susceptibility measurements. For more than one impurity remarkable non-linear enhancement and cancellation effects take place. We predict that the Curie impurity susceptibility will be observable for a random impurity concentration even in the thermodynamic limit.

Sebastian Eggert
University Kaiserslautern, Germany

Date submitted: 30 Nov 2005

Electronic form version 1.4