

## High Magnetic Field NMR Studies of Quantum Spin Chains and Ladders

Claude BERTHIER<sup>1,2</sup>, Mladen HORVATIC<sup>1</sup>, Yannick FAGOT-REVURAT<sup>3</sup>, Marc-Henri JULIEN<sup>2</sup>,  
Grégory CHABOUSSANT<sup>4</sup>, Hadrien MAYAFFRE<sup>2</sup>, Laurent P. LÉVY<sup>1</sup> and Pierre SÉGRANSAN<sup>2</sup>

<sup>1</sup> *Grenoble High Magnetic Field Laboratory, CNRS and MPI-FKF, BP 166, 38042 Grenoble, France*

<sup>2</sup> *Laboratoire de Spectrométrie Physique, Université J. Fourier, BP 87, F-38402 Saint Martin d'Hères, France*

<sup>3</sup> *Laboratoire de Physique des Matériaux, Faculté des Sciences, BP 239, 54506 Vandoeuvre les Nancy, France*

<sup>4</sup> *ISIS Facility, Rutherford Appleton Laboratory, Didcot, Oxon OX11 0QX, UK*

(Received December 21, 1999)

High magnetic field NMR techniques are applied to the microscopic study of two quantum antiferromagnets: the spin-Peierls compound  $\text{CuGeO}_3$ , in which the incommensurate phase has been studied from  $H = H_c = 13$  T up to 26 T, and the metallo-organic spin ladder  $\text{Cu}_2(\text{C}_5\text{H}_{12}\text{N}_2)_2\text{Cl}_4$  in which the spin dynamics has been studied in the whole phase diagram including two quantum critical points.

**KEYWORDS:** NMR, High Magnetic Field, Quantum Antiferromagnets