

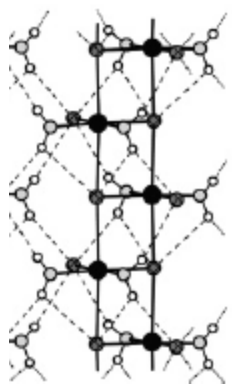


# Interplay of Frustration and Magnetic Field in 2D Quantum Antiferromagnet

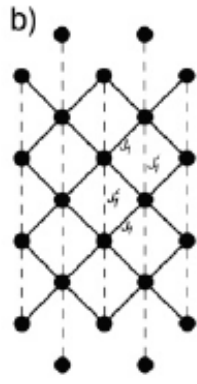


A. Orendáčová *et al.*, University, Košice, Slovakia; M. W. Meisel *et al.*, NHMFL.

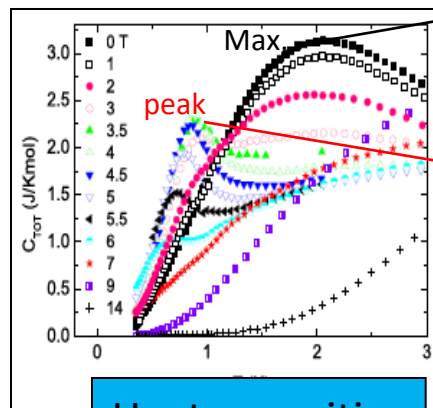
$\text{Cu}(\text{tn})\text{Cl}_2$  ( $\text{tn} = \text{C}_2\text{H}_{10}\text{N}_2$ ):  $S = \frac{1}{2}$  anisotropic 2D highly frustrated magnet: square lattice with  $nn$   $J$  ( $= 3$  K), frustrating  $nnn$   $J'$  ( $< 0.6$  J), weak interlayer  $J''$  ( $\sim 10^{-3}$  J)



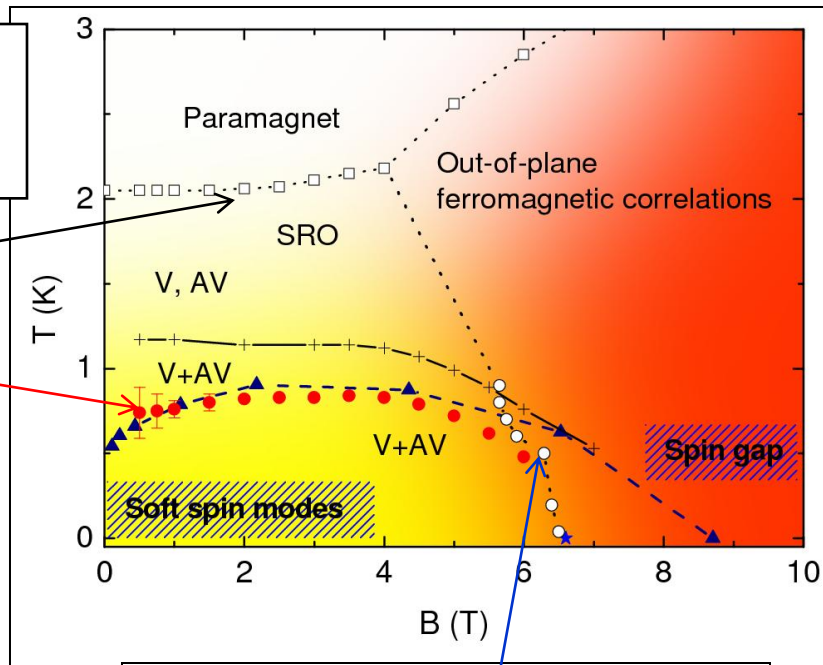
structure



idealized



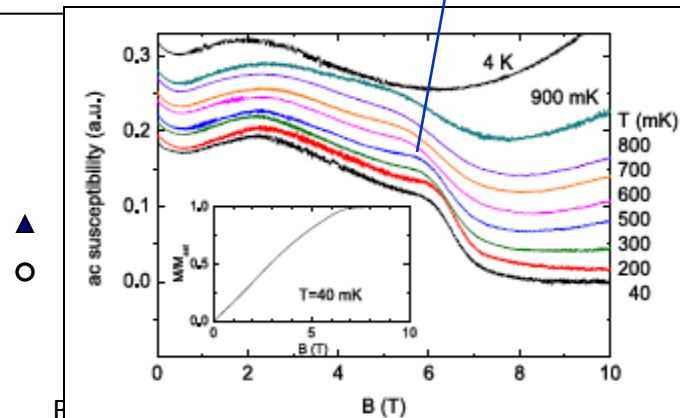
Heat capacities



**Test BKT model for ideal square lattice: vortex-antivortex (V-AV) binding at low  $T, B$  with transition to spin gap at  $B_{\text{sat}}$**

A. Orendáčová *et al.*, Phys Rev. B, 80, 144418 (2009)

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High B/Low T susceptibility measurements