**From RVB to Skyrmion Crystals: the many facets of spin Berry phases**

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Soon after the introduction of the RVB concept by P. W. Anderson in 1986, Kivelson, Rokhsar, and Sethna proposed that holes moving in a spin liquid may acquire bosonic statistics. This led me to speculate (around 1988) that one fermionic hole bound to a particular spin texture in 2D (a meron, i. e. a half-Skyrmion) would turn into a bosonic object, thanks to spin Berry phases. We also showed, with Xiao-Gang Wen, that these Berry phases would destabilize Nagaoka ferromagnetism for a small numbers of holes in a 2D Hubbard model at infinite coupling. A more spectacular application of spin Berry phases, confirmed by many theoretical and experimental works since the mid nineties, is the stabilization of Skyrmion textures bound to charge excitations in quantum Hall ferromagnets, occurring near integer filling factors of electronic Landau levels. Besides their prominent structural role, spin Berry phases have also a strong impact on the collective excitation spectrum around Skyrmion crystals, which is organized in a series of effective Landau levels (no to be confused with the underlying microscopic electronic Landau levels). I will then explain how recently developed magnon scattering experiments could test these predictions in graphene-based 2D systems.