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Spin dynamics in strongly-correlated spin systems: physics and methodology

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Inelastic neutron scattering (INS) and electron spin resonance (ESR) are two of key spectroscopy techniques, complementing each other and widely employed to study the spin dynamics in strongly correlated electron systems. While ESR is limited to magnetic excitations at Gamma-point, INS can nominally probe the spin dynamics within the whole Brillouin zone. On the other hand, the challenges regarding the sample size and hydrogen content, as well as magnetic-field limitation are not so critical in case of ESR. In this talk I will focus on our recent high-field ESR investigations of some quantum low-dimensional spin systems, supporting a number of INS observations and demonstrating the strength of neutron methods, including the discussion on sample environment issues.

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