

KN16 | UNUSUAL MAGNETIC ORDERINGS FROM THE INTERPLAY OF TRIANGULAR TOPOLOGY AND MAGNETIC ANISOTROPY

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Stackings of perfect triangular planes of transition metal ions offer a vast playground when looking for complex magnetic orderings, as geometrically induced frustration of antiferromagnetic exchanges leads to non-collinear magnetic structures; moreover, in the case of strong easy-axis magnetic anisotropy, magneto-elastic effects are often at play to lift the degeneracy of the magnetic ground state and allow the system to order. Several examples will be given, in which magnetic exchanges and/or magnetic anisotropy are tuned, to achieve multiferroic properties in particular, or to investigate more theoretical aspects of condensed matter, such as the well-known Transverse Field Ising Model. Those examples also illustrate the invaluable technique that is neutron scattering, both elastic and inelastic, especially when combined with the modelling tools that are available today.