

Low-dimensional quantum spin systems

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The talk is intended to give a survey of theoretical concepts and recent developments in the field of low-dimensional quantum spin systems including their relevance to experiments and real materials. Emphasis is on quantum phenomena for models of localized spins such as quantum phase diagrams, quantum phase transitions and collective excitations. I will discuss in particular spin liquid phases as induced by competing interactions and external magnetic fields, the emergence of new phases under the influence of multispin exchange (in particular cyclic exchange) and excitation continua resulting from the fractionalization of spin.