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The SU(N) Heisenberg model: from the Haldane conjecture to chiral phases

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The possibility to realize Mott phases with ultra-cold fermions in optical lattices has motivated the community to revisit the properties of the SU(N) cousin of the celebrated SU(2) Heisenberg model of quantum magnetism. In this talk, I will try to give an overview of the recent progress made on this model, with emphasis on two aspects: the generalisation of the Haldane conjecture in 1D, and the possibility to stabilize chiral quantum liquid phases in realistic models.