Abstract Submitted
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Bond operator theory for the frustrated anisotropic Heisenberg antiferromagnet on a square lattice[1] ANTONIO PIRES, Universidade Federal de Minas Gerais — In this work we use the bond operator formalism in a mean field approximation to study quantum phase transitions in the S = 1 Heisenberg antiferromagnet with single ion anisotropy up to the next-next-nearest neighbor coupling (the J1-J2-J3 model) on a square lattice. The model features a complex T = 0 phase diagram, whose ordering vector is subject to quantum corrections with respect to the classical limit. The phase diagram shows a quantum paramagnetic phase situated among Neél, spiral and collinear states.

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