SFB/TRR 21 - Seminar
16. Juli 2009, Stuttgart

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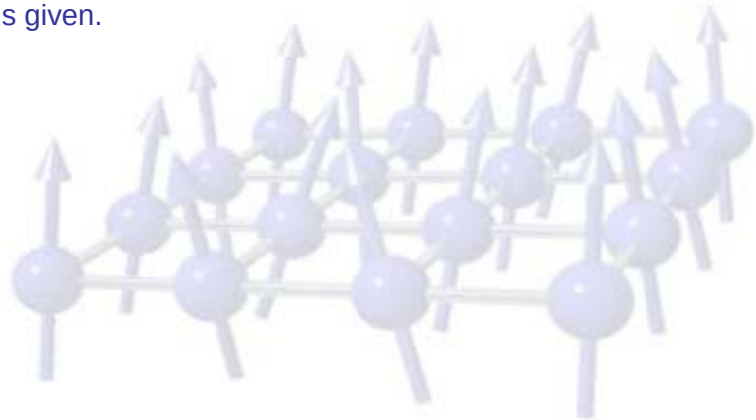
Towards a path integral for dimerized quantum spin systems

Dimerized quantum spin systems are presently actively studied due, on the one hand, to the possible novel quantum states that they may display, like valence bond solids or spin liquids. On the other hand, systems with a direct transition between a Neel phase and a valence bond solid are candidates for deconfined quantum critical points, that are proposed to evade the Landau-Ginzburg paradigm of phase transitions. Dimerized spin pairs are naturally described by the SO(4) algebra or bond-operators that create and annihilate singlets and triplets. For a faithful representation that respects the SO(4) algebra, a set of constraints must be considered. In this talk, by using Fadeev-Jackiw and Dirac theories for constrained systems, the path integral formulation for dimerized quantum spin systems is given.



16. Juli 2009, 14:00 Uhr

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