Quantum phases of SU(N) spins on a diamond lattice[1] NISHEETA
DESAI, JONATHAN DEMIDIO, RIBHU KAUL, Univ of Kentucky — We study
the SU(N) generalization of the Heisenberg antiferromagnet on the diamond lattice.
We use the stochastic series expansion QMC method to compute properties of and
hence deduce the ground states of the model as we vary N. We find that the magnetic
order present for N=2 is destroyed for all N>9. The nature of the non-magnetic state
is studied paying particular attention to the nature of valence bond solid ordering
and the possibility of a quantum spin liquid. The nature of the phase transition
between different phases is investigated.

Nisheeta Desai
Univ of Kentucky