

Analytical solution of extended Hubbard models on small clusters (II): Thermodynamics and magnetism of the related cluster gases

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From the analytical solution of the Hubbard model extended by either nearest-neighbour Coulomb correlation and/or nearest neighbour Heisenberg exchange for a triangle, square, and tetrahedron respectively the grand canonical potential $\Omega(\mu, T, h)$ for the related cluster gases are calculated. The specific heat, the magnetic phase diagrams and the susceptibilities are studied for arbitrary values (attractive and repulsive) of the three interaction constants. The relation of the cluster gas results to extended systems is discussed.

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