

Mean-field theory for disordered systems of correlated electrons is constructed, where correlations caused by Hubbard's interaction are included in the Hartree approximation. This theory is then used to describe influence of electron correlations on density of states and also to describe impact of disorder on a phase diagram of ferromagnetic order. Further the theory is used to obtain a two-particle vertex. Influence of a strength of electron correlations on analyticity and behaviour of the two-particle vertex is studied.