FERMI SYSTEMS WITH LONG RANGE INTERACTIONS

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I will define a Banach space of models for fermions or quantum spins in the lattice with long range interactions and explicit the structure of (generalized) equilibrium states. This gives a first answer to an old open problem in mathematical physics - first addressed by Ginibre in 1968 within a different context - about the validity of the so-called Bogoliubov approximation on the level of states. As an application, I will present some thermodynamic properties of a certain type of inhomogeneous Fermi and quantum spin systems on lattices.