1145-35-2619        **Manoussos G Grillakis\*** (`mng@math.umd.edu`), Dept. of Math, University of Maryland, College Park,, MD 20742, and **Matei Machedon**. *A-priori estimates for the Hartree-Fock-Bogoliubov approximation of N Bosons.*

We consider a certain type of approximation of $N$ (where $N$ is large) Bosons which is called Hartree-Fock-Bogoliubov. The approximation consists of a system of coupled dispersive equations in $6+1$ dimensions and depends on the parameter $N$ (number of particles). The limit system as $N \to \infty$ is singular and we are interested in obtaining a-priori estimates for the HFB system which are independent of $N$. In order to achieve this goal we have to work with novel norms i.e. use apriori estimates beyond the standard Strichartz estimates and the associated norms. This work is in collaboration with Matei Machedon. (Received September 25, 2018)