Consider a system of N bosons on the three dimensional unit torus interacting via a pair potential $N^2V(N(x_i - x_j))$, where $= (x_1, ..., x_N)$ denotes the positions of the particles. Suppose that the initial data $\psi_{N,0}$ satisfies the condition $(\psi_{N,0}, H_N^2 \psi_{N,0}) \leq CN^2$, where H_N is the Hamiltonian of the Bose system. Let $\psi_{N,t}$ denote the solution to the Schrödinger equation with Hamiltonian H_N. Gross and Pitaevskii proposed to model the dynamics of such system by a nonlinear Schrödinger equation, the Gross-Pitaevskii (GP) equation. The GP hierarchy is an infinite BBGKY hierarchy of equations so that if u_t solves the GP equation, then the family of k-particle density matrices $\{\otimes_k u_t, k \geq 1\}$ solves the GP hierarchy. We prove that as $N \to \infty$ the limit points of the k-particle density matrices of $\psi_{N,t}$ are solutions of the GP hierarchy. The uniqueness of the solutions to this hierarchy remains an open question. Our analysis requires that the N boson dynamics is described by a modified Hamiltonian which cuts off the pair interactions whenever at least three particles come into a region with diameter much smaller than the typical inter-particle distance. Our proof can be extended to a modified Hamiltonian which only forbids at least n

particles from coming close together, for any fixed n.