1107-35-332 **Justin Holmer\***, 151 Thayer St, Mathematics Department, Box 1917, Providence, RI 02912, and **Xuwen Chen**. *The derivation of 1D focusing NLS from 3D quantum many-body evolution.*

We consider the focusing 3D quantum many-body dynamic which models a dilute bose gas strongly confined in two spatial directions. We assume that the microscopic pair interaction is attractive and given by $a^{3\beta-1}V(a^{\beta}\cdot)$ where $\int V \leqslant 0$ and $a$ matches the Gross-Pitaevskii scaling condition. We derive rigorously the 1D focusing cubic NLS as the mean-field limit of this 3D focusing quantum many-body dynamic and obtain the exact 3D to 1D coupling constant. (Received January 18, 2015)