1067-82-1833   **Paul H Jung*** (`pjung@sogang.ac.kr`), Department of Mathematics, Sogang University, Seoul, South Korea, and **Michael Aizenman** and **Sabine Jansen**. *Symmetry breaking in quasi-1D Coulomb systems.*

Quasi one-dimensional systems are systems of particles in domains which are infinite in one direction and uniformly bounded in all other directions, e.g. a cylinder of infinite length.

Our main result is that for such particle systems with Coulomb interactions and neutralizing background, the so-called "jellium", at any temperature and at any finite-strip width there is translation symmetry breaking.

The argument used here bypasses the question of whether the translation symmetry breaking is manifest already at the level of the one particle density function. It is akin to that of Aizenman and Martin (1980) for a similar statement concerning symmetry breaking at all temperatures in strictly one-dimensional Coulomb systems. The extension is enabled through bounds which establish tightness of finite-volume charge fluctuations. (Received September 22, 2010)