



Contribution ID: 60

Type: **Talk**

## Universal Short Range Correlations in Bosonic Helium Clusters

*Monday 2 September 2019 14:55 (20 minutes)*

Short-range correlations in bosonic Helium clusters, composed of  $^4\text{He}$  atoms, are studied utilizing the generalized contact formalism. The emergence of universal  $n$ -body short-range correlations, associated with the repulsive  $1/r^{12}$  part of the Lennard-Jones potential, is formulated and demonstrated numerically via Monte Carlo simulations. The values of the  $n$ -particle contacts are evaluated for  $n \leq 5$ . In the thermodynamic limit, the two-body contact is extracted from available experimental measurements of the static structure factor of liquid  $^4\text{He}$  at high momenta, and found in a good agreement with the value extracted from our calculations.

**Author:** BAZAK, Betzalel

**Co-authors:** Dr VALIENTE, Manuel; BARNEA, Nir

**Presenter:** BAZAK, Betzalel

**Session Classification:** Parallel Session Monday: Atoms and Molecules

**Track Classification:** Atoms and Molecules