

1079-05-270

**Matthew Kahle\*** ([mkahle@math.osu.edu](mailto:mkahle@math.osu.edu)). *Configuration spaces of hard spheres.*

I will discuss recent progress on understanding configuration spaces of hard spheres in a bounded region. This is motivated by classical problems in statistical mechanics, but leads to many interesting new questions in topology, geometry, and combinatorics.

I will report on recent work which applies Morse theory to understand the topology of these spaces. Some of this is joint with Yuliy Baryshnikov & Peter Bubenik, and some with Robert MacPherson. (Received January 16, 2012)