

Abstract Submitted  
for the DAMOP20 Meeting of  
The American Physical Society

**Breaking Scale Invariance: The role of the effective range on the bulk viscosity in s- and p-wave gases** JEFF MAKI, SHIZHONG ZHANG, The University of Hong Kong — We investigate the role of the effective range on the bulk viscosity of s- and p-wave gases. Even At resonance, the presence of the effective range breaks the scale invariance of the system, and hence results in a non-zero bulk viscosity. However, we show that the effective range has fundamental differences in the two cases. In the s-wave case, the role of the effective range is perturbative, and its contribution to the bulk viscosity vanishes when the effective range tends to zero. On the other hand, the effective range in p-wave gases will lead to a non-zero bulk viscosity, even in the zero-range limit. We illustrate this difference by computing the bulk viscosity spectral function in the high temperature limit, and by comparing the high-frequency tails, and sum rules, for both s- and p-wave gases.

Jeff Maki  
The University of Hong Kong

Date submitted: 26 Jan 2020

Electronic form version 1.4