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Bulk Viscosity and the Virial Expansion for a Three-Component Fermi Gas in One Dimension JEFF MAKI, The University of Hong Kong, CARLOS ORDONEZ, The University of Houston — We explore the transport properties of three-component Fermi gases confined to one spatial dimension, interacting via a three-body interaction, in the high temperature limit. At the classical level, the three-body interaction is scale invariant in one dimension. However, upon quantization, an anomaly appears which breaks the scale invariance, similar to two-body interactions in two dimensions. The anomaly will naturally lead to a finite viscosity, as scale invariance is broken. We calculate the bulk viscosity in the high-temperature limit and compare the result to the two-body anomalous interaction in two dimensions. We show there is an exact mapping between these two anomalous systems in the high temperature limit.

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