

1173-35-264

Alim Sukhtayev* (sukhtaa@miamioh.edu), 123 Bachelor Hall, 301 S. Patterson Ave., Oxford, OH 45056. *Spectral decomposition and decay to grossly determined solutions for a simplified BGK model.*

For a simplified 1D BGK model we show that H^1 solutions decay exponentially in L^2 to a subclass of the class of grossly determined solutions as defined by Truesdell and Muncaster in the context of Boltzmann's equation. In the process, we determine the spectrum and generalized eigenfunctions of the associated non-selfadjoint linearized operator and derive the associated generalized Fourier transforms and Parseval's identity. Notably, our analysis makes use of rigged space techniques originating from quantum mechanics, as adapted by Ljance and others to the nonselfadjoint case.

This is joint work with Kevin Zumbrun. (Received September 21, 2021)