Errata for *Thermodynamics and Superfluidity of a Strongly Interacting Fermi Gas* by J. Kinast

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Listed below are known errors appearing in J. Kinast's Ph.D. dissertation. There are two versions of the dissertation, a single-sided version (available as an electronic .pdf file and hardcover bound edition in the Duke University library) and a double-sided version with card stock covers (distributed to JETLAB group members). While the content of the single-sided and double-sided versions are the same, small formatting changes in the two versions resulted in slightly different page numbering. As a result, for all of the errors listed below, I report page numbers for both the single-sided and double-sided versions.

Note that all of the listed errors are typographical errors that do not appear in the programs and code used to process or analyze the data contained in the dissertation. As such, the results and conclusions of the dissertation are unaffected by the errors listed here.

If you find errors that are not listed below, please contact the author at kinast@phy.duke.edu.

- Throughout Chapter 4 and Section 7.3, there are formulas containing trap-averaged quantities of the form $\langle \xi \rangle$, but this quantity is not defined in these chapters/sections. See equation 7.32 on page 225 in the single-sided version (page 220 in the double-sided version) for the definition.

- In equation 6.21 on page 168 in the single-sided version (page 163 in the double-sided version), there should be a minus sign in front of the

exponential in the polylogarithm. That is, equation 6.21 should read:

$$n(x;T) = -\frac{3\,N}{\sqrt{\pi}\,\sigma_x}\left(\frac{T}{T_F}\right)^{5/2} Li_{5/2}\left[-\exp\left(\frac{\frac{\mu}{\varepsilon_F} - \frac{x^2}{\sigma_x^2}}{T/T_F}\right)\right]$$

- In equation 6.26 on page 174 in the single-sided version (page 171 in the double-sided version), there should be a minus sign in front of the exponential in the polylogarithm. That is, equation 6.26 should read:

$$n(x;\tilde{T}) \propto Li_{5/2}\left[-\exp\left(\frac{\frac{\mu}{\varepsilon_F} - \frac{x^2}{(\sigma_x^*)^2}}{\tilde{T}}\right)\right]$$

- In section 7.3 in the middle of page 221 in the single-sided version (at the bottom of page 215 in the double-sided version), the parenthetical statement in the phrase "In the hydrodynamic limit ($\tau_R \to \infty$)..." is incorrect. It should read: "In the hydrodynamic limit ($\tau_R \to 0$)..."

- In equation A.45 on page 278 in the single-sided version (page 273 in the double-sided version), there should be a minus sign in front of the exponential in the polylogarithm. That is, equation A.45 should read:

$$n(x,y,z;T) = -\frac{3\,N}{\pi^{3/2}\,\sigma_x\,\sigma_y\,\sigma_z}\left(\frac{T}{T_F}\right)^{3/2} Li_{3/2}\left[-\exp\left(\frac{\frac{\mu}{\varepsilon_F} - \frac{x^2}{\sigma_x^2} - \frac{y^2}{\sigma_y^2} - \frac{z^2}{\sigma_z^2}}{T/T_F}\right)\right]$$

- In equation A.47 on page 278 in the single-sided version (page 273 in the double-sided version), there should be a minus sign in front of the exponential in the polylogarithm. That is, equation A.47 should read:

$$n(x,z;T) = -\frac{3\,N}{\pi\,\sigma_x\,\sigma_z}\left(\frac{T}{T_F}\right)^{2} Li_{2}\left[-\exp\left(\frac{\frac{\mu}{\varepsilon_F} - \frac{x^2}{\sigma_x^2} - \frac{z^2}{\sigma_z^2}}{T/T_F}\right)\right]$$

- In equation A.48 on page 278 in the single-sided version (page 273 in the double-sided version), there should be a minus sign in front of the exponential in the polylogarithm. That is, equation A.48 should read:

$$n(x;T) = -\frac{3\,N}{\sqrt{\pi}\,\sigma_x}\left(\frac{T}{T_F}\right)^{5/2} Li_{5/2}\left[-\exp\left(\frac{\frac{\mu}{\varepsilon_F} - \frac{x^2}{\sigma_x^2}}{T/T_F}\right)\right]$$