

Biss *et al.* Reply: Yvan Castin identifies two potential issues regarding the interpretation of our experimental data on the curvature of the collective mode of strongly interacting Fermi gases [1]. These concern the finite temperature and the finite momentum of the data. As documented in our work [2], the curvature is determined from experimental data taken at finite temperature of $0.128(8)T_F$ within the momentum range of $0.29k_F$ to $1.63k_F$ [Figs. 3(a) and 3(b)]. This might very well lead to the stated or similar deviations between the experimentally determined curvature and the zero-temperature, low-momentum curvature of the mode. As there is presently no quantitatively accurate theory for the collective mode spectrum of strongly interacting superfluids, we believe that the curvature experimentally determined in our work represents an important benchmark stimulating further investigations into the temperature and momentum dependence of the curvature of the collective mode dispersion, including its sign.

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- [1] Y. Castin, preceding Comment, *Phys. Rev. Lett.* **133**, 109301 (2024).
- [2] H. Biss, L. Sobirey, N. Luick, M. Bohlen, J. J. Kinnunen, G. M. Bruun, T. Lompe, and H. Moritz, Excitation spectrum and superfluid gap of an ultracold Fermi gas, *Phys. Rev. Lett.* **128**, 100401 (2022).