

# Correlation and temperature dependence in density functional theory

*Monday 12 September 2022 16:15 (45 minutes)*

Adiabatic connection approaches have long been used in ground-state density functional theory for analyzing exact and approximate density functional theory, and it has more recently been applied to both thermal and ensemble versions of the theory. In this talk, I'll introduce the adiabatic connection and what changes for this tool when at the high temperatures and densities common to warm dense matter. I will then discuss how we use the adiabatic connection to explore limiting behavior of the exchange-correlation free energy and to develop new ways to approximate temperature dependence.

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