Non-Zero Temperature analysis of a quasi2D dipolar gas
CHRISTOPHER TICKNOR, Los Alamos National Laboratory — We present non-zero Temperature analysis of a quasi2D dipolar gas. To do this, we use the Hartree Fock Bogoliubov (HFB) method within the Popov approximation. This formalism is a set of non-local equations containing the dipole-dipole interaction and the condensate and thermal correlation functions, which are solved self-consistently. We detail the numerical method used to implement the scheme. We present density profiles for a non-zero temperature dipolar gas in q2D, and compare these results to a gas with zero-range interactions. Additionally, we analyze the excitation spectrum.

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