

Abstract Submitted  
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**Progress in exact treatment of fermions at finite temperature**<sup>1</sup> JONATHAN L. DUBOIS, BERNI J. ALDER, Lawrence Livermore National Lab — We will discuss some key features of the structure of permutation space for interacting Fermi systems. Exploiting these features, we will then demonstrate improved efficiency in the exact path integral Monte Carlo treatment of liquid  $^3\text{He}$  by using importance sampling to deemphasize the contribution of long permutation cycles to the partition function. Finally, a route to a polynomial scaling algorithm for homogeneous Fermi systems will be presented.

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