

Abstract Submitted
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Creating an Inexpensive Grid for Monte Carlo Calculations

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— We have developed software that converts an unused PC into a workstation that
accepts jobs from a server and sends all results back to this server. Using a grid of
up to 100 machines, a set of explicitly correlated wavefunctions optimized by Filippi
and Umrigar and variational Monte Carlo we have plotted the electron density, the
intracule density, the extracule density, the electron density difference, two forms of
the kinetic energy density, the Laplacian of the electron density, the Laplacian of
the intracule density and the Laplacian of the extracule density of the ground state
of Li₂, Be₂, B₂, C₂, N₂, O₂ and F₂ near their equilibrium distance.

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