Plots for Alpha Formation in Mostly Neutron Matter

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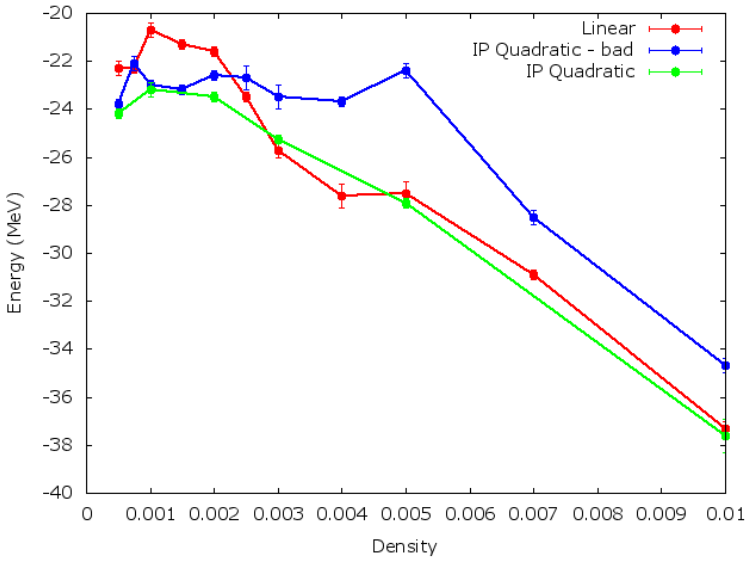
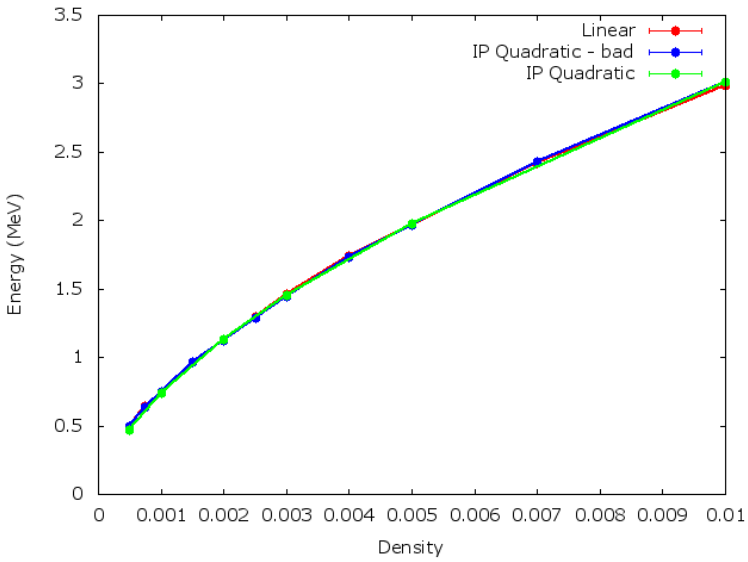
Contents

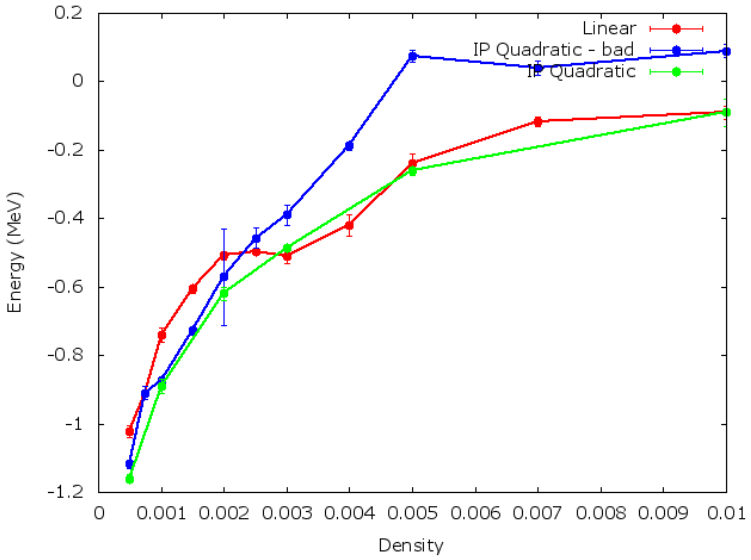
1 Total Energy Plots for Alpha, 14n, and 14n2p



(a) Alpha energy calculated as $16\epsilon_{14n2p} - 12\epsilon_{14n}$ where $\epsilon = E/A$.

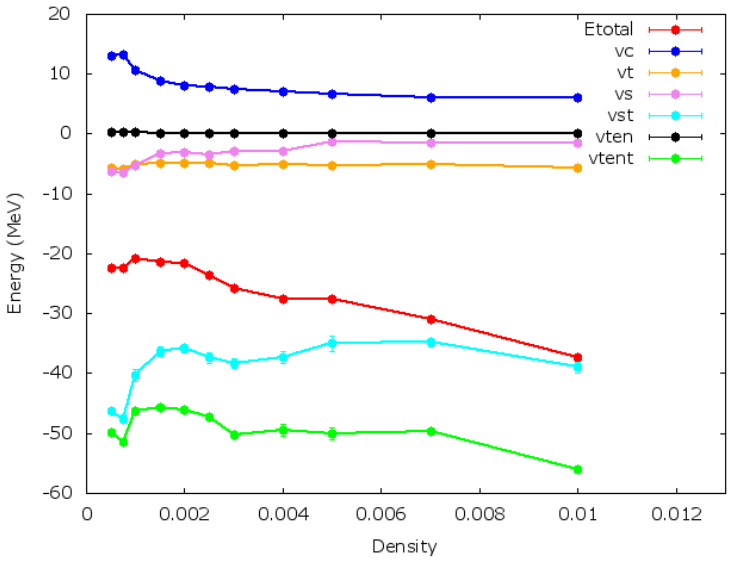


(b) Energy/particle for 14 neutrons.

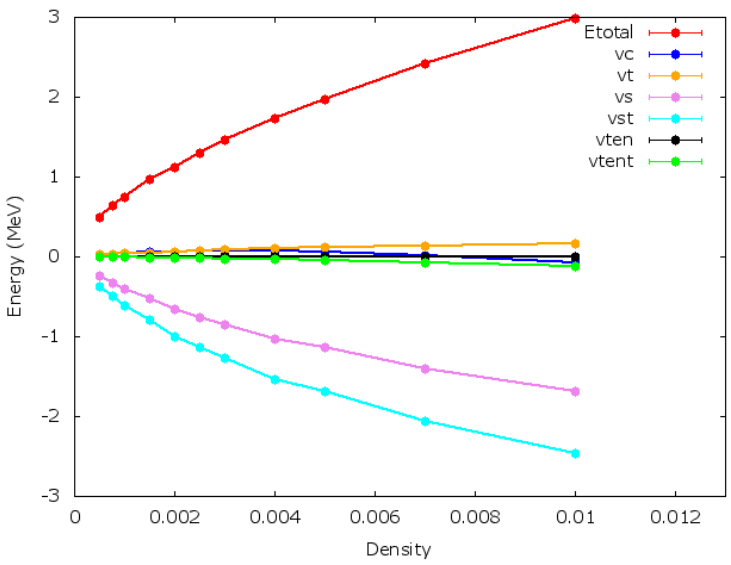


(c) Energy/particle for 14 neutrons + 2 protons.

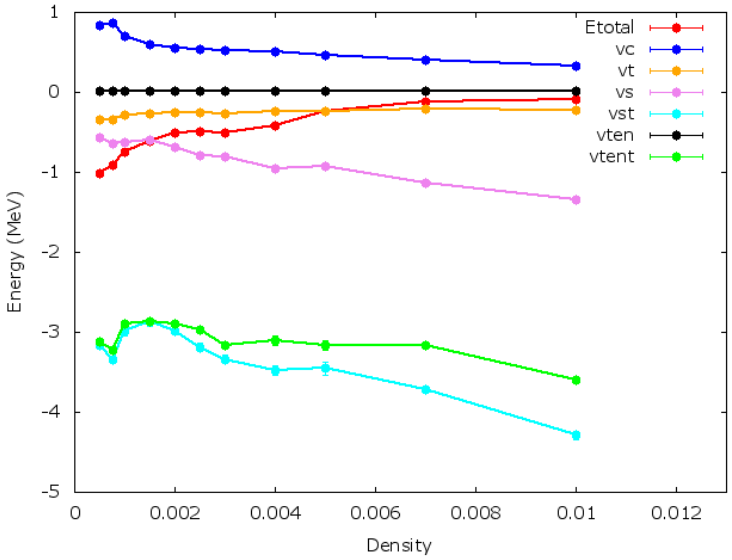
2 Breakdown of AV6' Potential Pieces with Linear Correlations



(a) Alpha energy calculated as $16\epsilon_{14n2p} - 12\epsilon_{14n}$ where $\epsilon = E/A$.

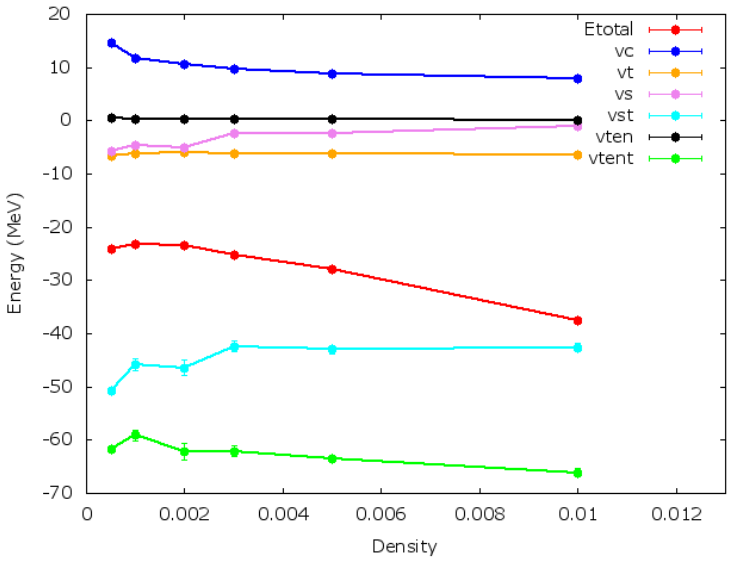


(b) Energy/particle for 14 neutrons.

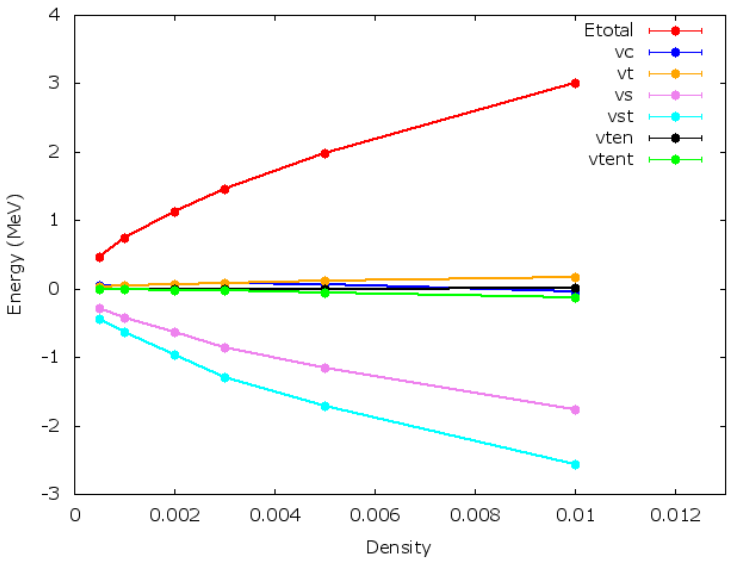


(c) Energy/particle for 14 neutrons + 2 protons.

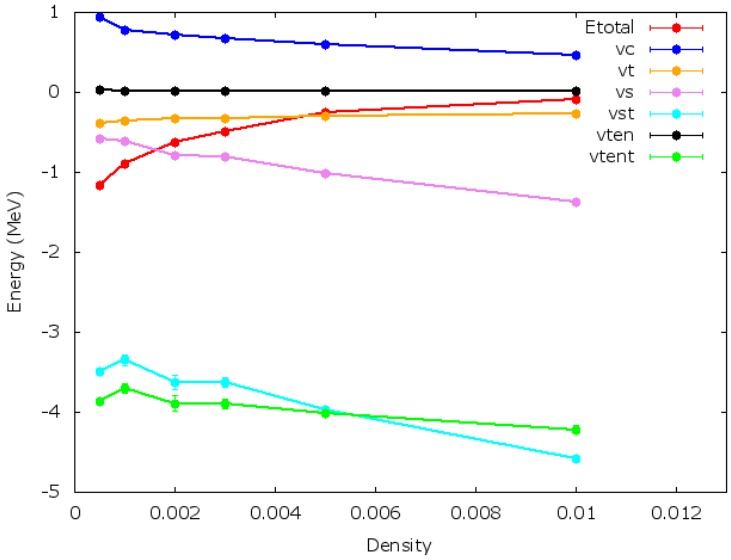
3 Breakdown of AV6' Potential Pieces with IP Correlations



(a) Alpha energy calculated as $16\epsilon_{14n2p} - 12\epsilon_{14n}$ where $\epsilon = E/A$.

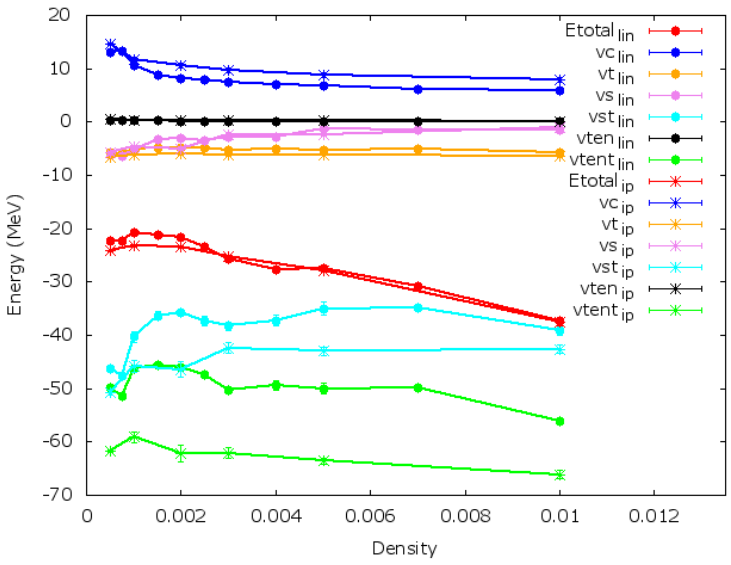


(b) Energy/particle for 14 neutrons.

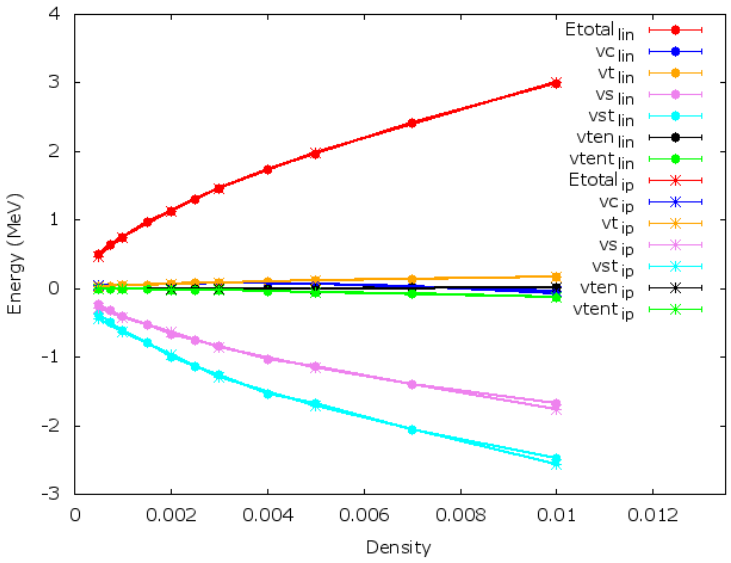


(c) Energy/particle for 14 neutrons + 2 protons.

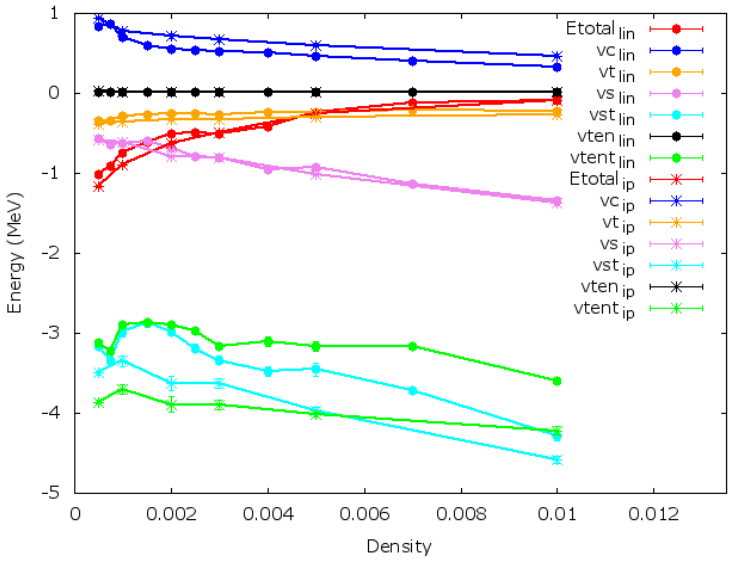
4 Breakdown of AV6' Potential Pieces with Both Linear and IP Correlations



(a) Alpha energy calculated as $16\epsilon_{14n2p} - 12\epsilon_{14n}$ where $\epsilon = E/A$.



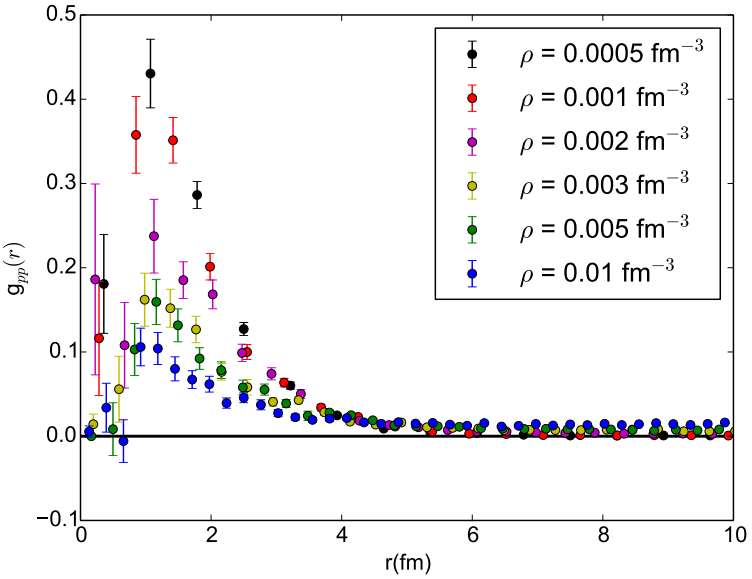
(b) Energy/particle for 14 neutrons.



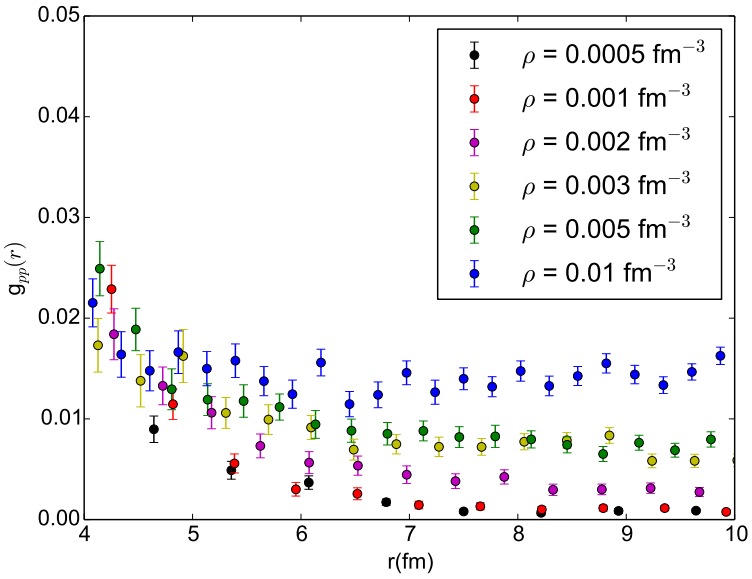
(c) Energy/particle for 14 neutrons + 2 protons.

5 Distribution Functions for Linear and IP Correlations for cluster calculations

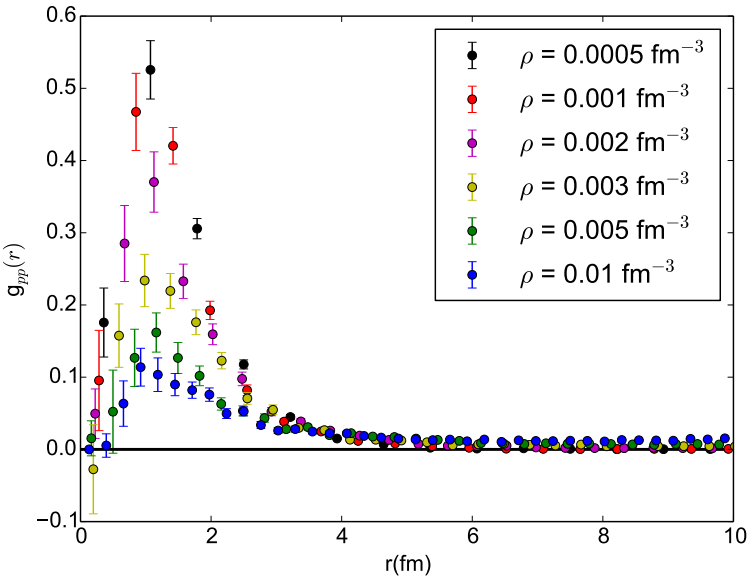
Here we're looking at the *pp* distribution function, like they used in here to look for alpha clusters.



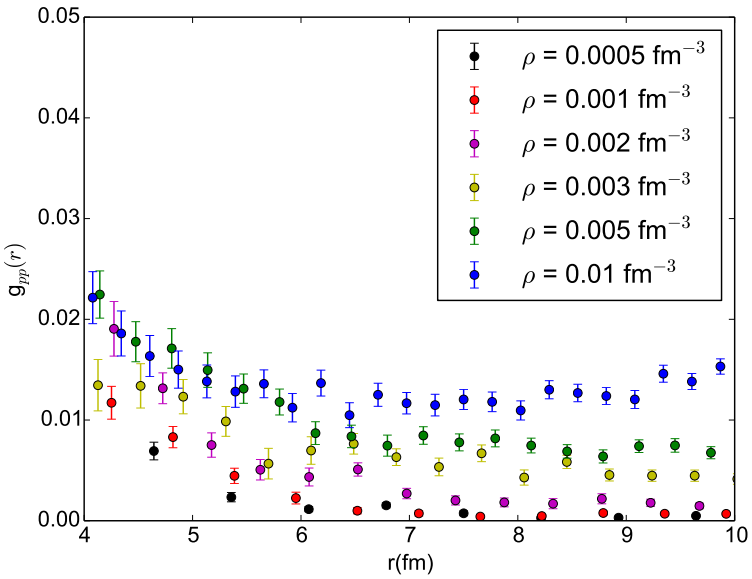
(a) $g_{pp}(r)$ for linear correlations.



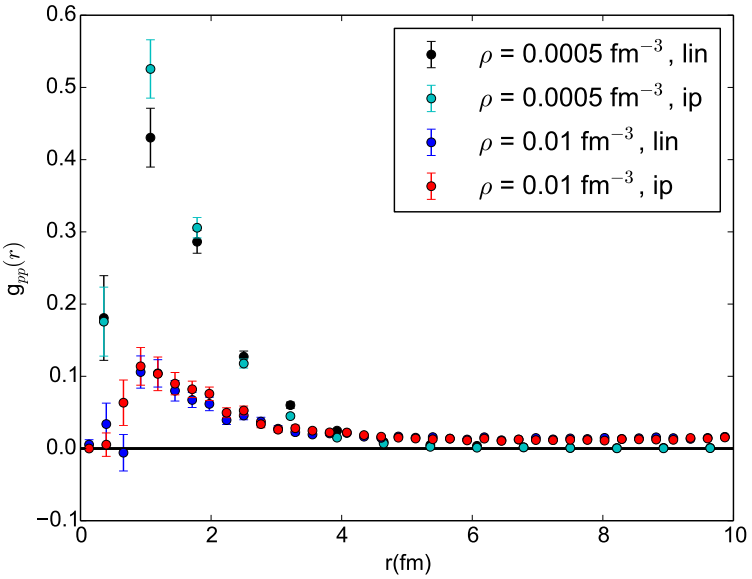
(b) $g_{pp}(r)$ for linear correlations for high r.



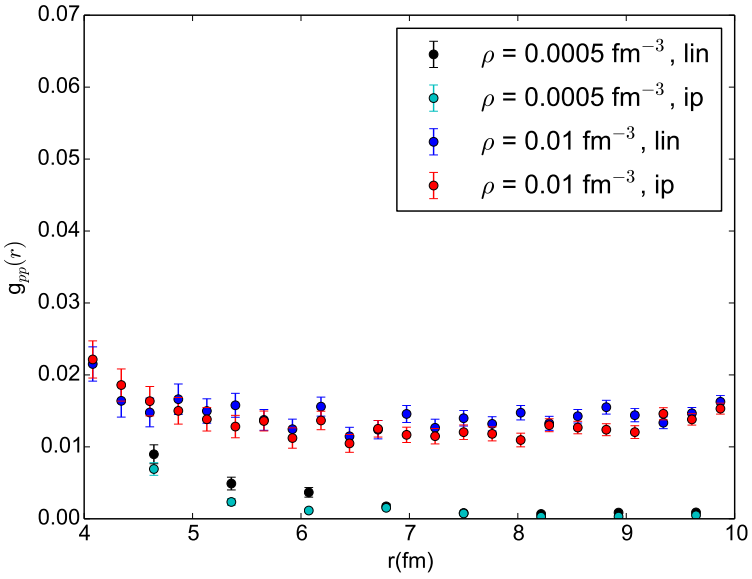
(c) $g_{pp}(r)$ for IP correlations.



(d) $g_{pp}(r)$ for IP correlations for high r.

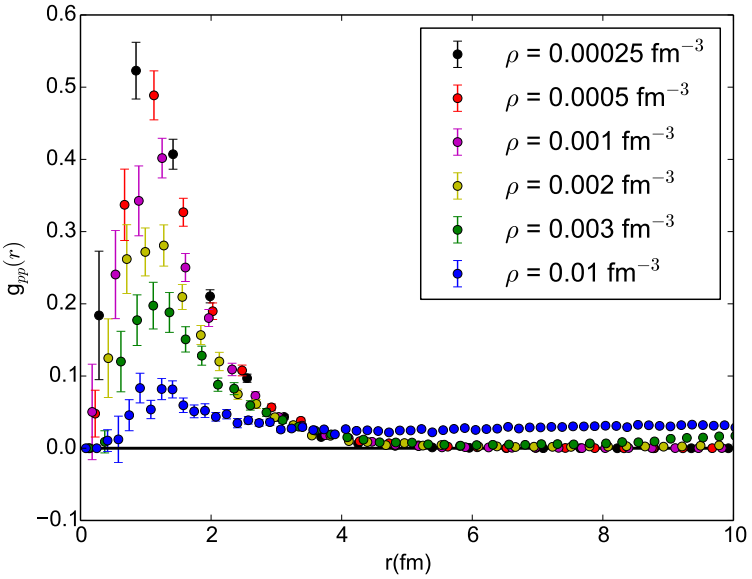


(e) Comparison of $g_{pp}(r)$ for linear and IP correlations.

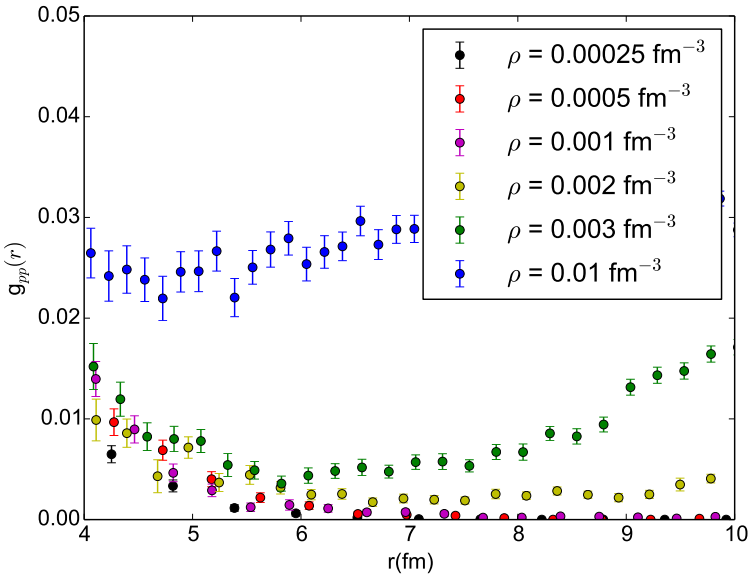


(f) Comparison of $g_{pp}(r)$ for linear and IP correlations for high r.

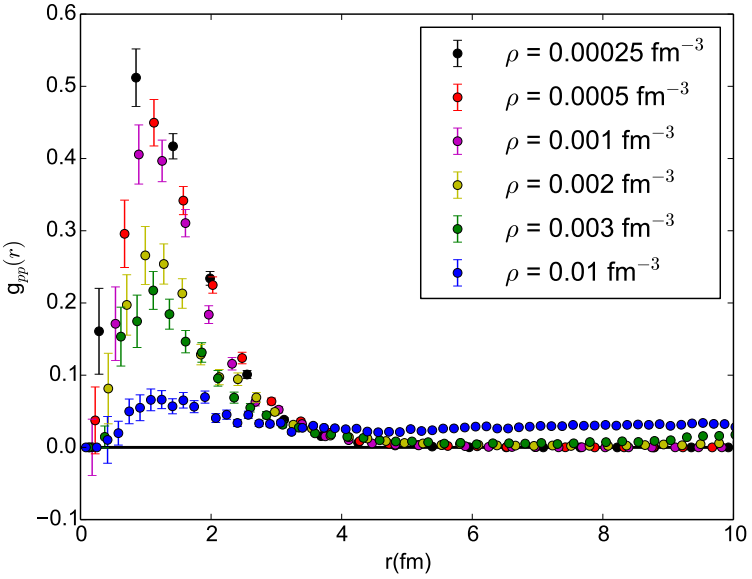
6 Distribution Functions for Linear and IP Correlations for 2n2p calculations



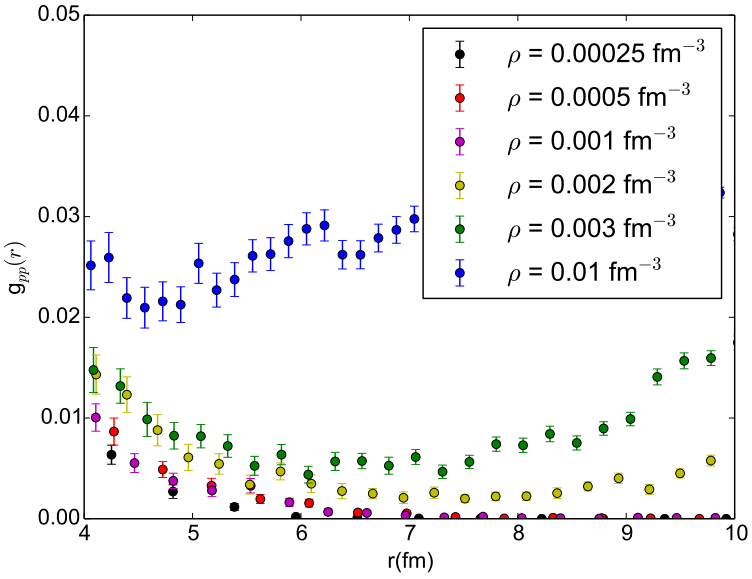
(a) $g_{pp}(r)$ for linear correlations for 2n2p.



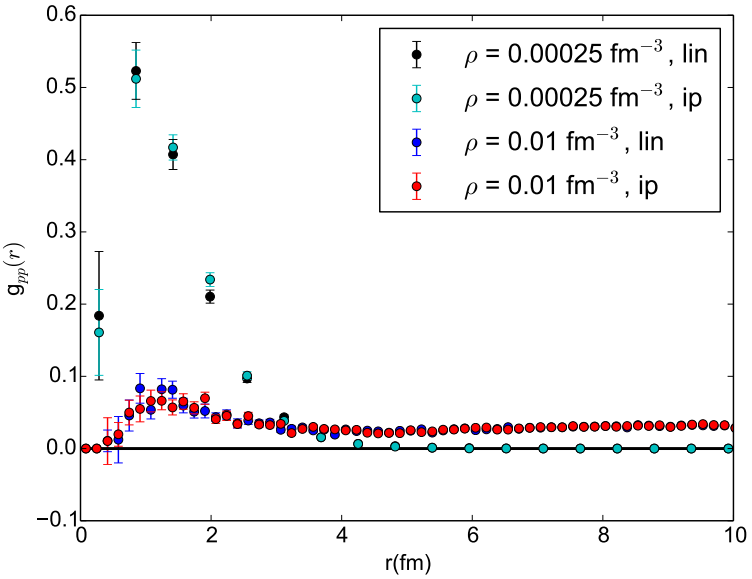
(b) $g_{pp}(r)$ for linear correlations for high r for 2n2p.



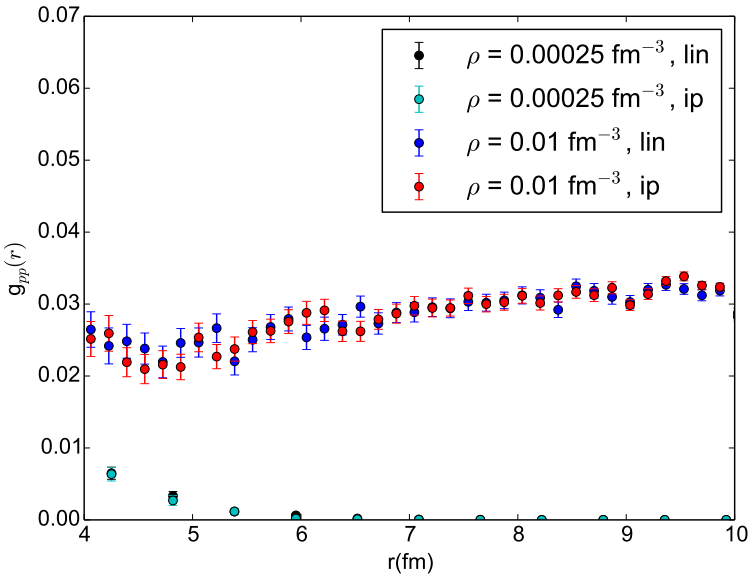
(c) $g_{pp}(r)$ for IP correlations for 2n2p.



(d) $g_{pp}(r)$ for IP correlations for high r for 2n2p.

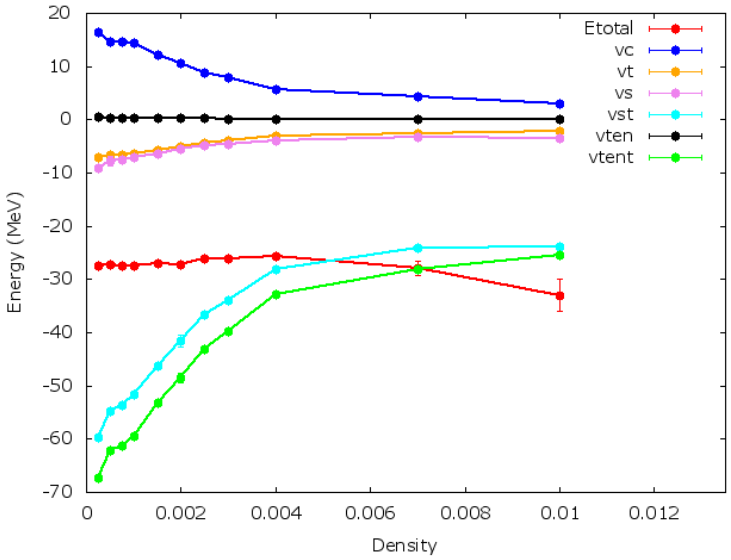


(e) Comparison of $g_{pp}(r)$ for linear and IP correlations for 2n2p.

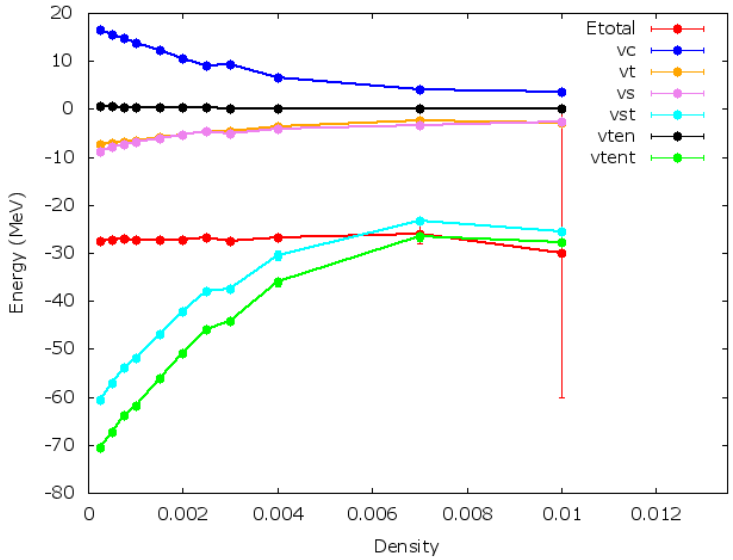


(f) Comparison of $g_{pp}(r)$ for linear and IP correlations for high r.

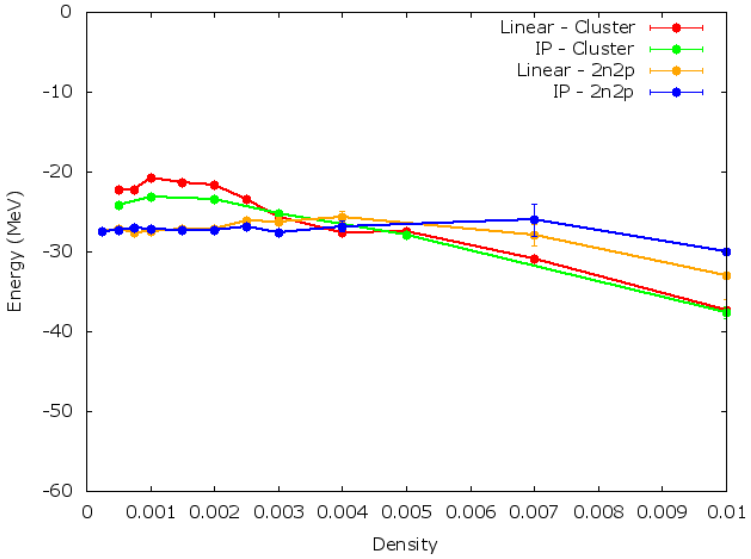
7 2n2p plots



(a) Energy of pieces of AV6' compared for linear correlations.



(b) Placeholder for IP plot, currently lin.Energy of pieces of AV6' compared for IP correlations.



(c) Energy of alpha particle calculated as a cluster in mostly neutron matter and 2 neutrons and 2 protons with both linear and IP correlations.