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Density and spin response functions in ultracold fermionic gases

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WOOD, Cambridge University, UK, DARRYL SMITH, LANL — We study the
two-body correlation functions in a two-component ultracold fermionic gas governed
by an attractive short-range interaction. Based on a zero-temperature mean-field
analysis we suggest that considerable insight in the properties of the ground-state
can be gained by measuring the density and spin response functions, and predict dif-
ferences between the properties of a ^{40}K ultracold fermionic gas and the properties
of a ^6Li ultracold fermionic gas.

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