

In the three-dimensional Schrödinger equation, the generalized Birtmann–Martin inequalities connect the moments of the ground state density to the energy differences between the lowest level of each angular momentum  $l$  and the ground state. They are discussed in the case of the power-law potentials, as well as the  $\ln r$  potential. Use is made of the derived moments to reconstruct the form factor  $F(q)$ , i.e., the Fourier transform of the ground state density. Padé approximants are used to describe the high  $q$  behavior of the form factor when only a limited number of low order moments are known. The estimate of the ground state density at the origin is also discussed