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### Charge density distributions and charge form factors of some even-A p-shell nuclei

Ahmed N. Abdullah\*

Department of Physics, College of Science, University of Baghdad, Baghdad, Iraq.

**Abstract:** The ground state charge density distributions, elastic electron scattering form factors and the corresponding rms radii for some 1p-shell nuclei with  $Z = N$  (such as  ${}^6\text{Li}$ ,  ${}^{10}\text{B}$ ,  ${}^{12}\text{C}$  and  ${}^{14}\text{N}$  nuclei) have been calculated using the single particle radial wave functions of harmonic oscillator (HO) and Woods-Saxon (WS) potentials. The calculated results are discussed and compared with the experimental data. It is found that the contributions of the quadrupole form factors  $F_2(q)$  in  ${}^{10}\text{B}$  and  ${}^{14}\text{N}$  nuclei, which are described by the undeformed p-shell model, are essential for obtaining a remarkable agreement between the theoretical and experimental form factors.

**Keywords:** Charge density distributions, quadrupole form factors, Woods-Saxon and harmonic oscillator potentials. **PACS number(s):** 25.30.Bf, 21.10.Ft.

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