

## Effects of Extra Dimensions on the Energy Characteristics of Heliumoid Electron-Nuclear Systems

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It is well known that at short distances the Coulomb's law differs from that in classical physics. Studies are usually limited to the inclusion of QED corrections. But, as shown in the standard model, QED is not the full theory. According to the standard model, contributions to the energy characteristics of the ground state of a helium atom and its isoelectron sequence should have an extra dimensions, which are introduced in some versions of the quantum theory of gravity. A method for accounting for this contribution in heliumoid electron-nuclear systems has been developed in [1]. In the present work the proposed method is applied using the highly accurate results shown in [2].

### References

- [1] Yu-Xiao Liu, Xin-Hui Zhang, Yi-Shi Duan, Detecting Extra Dimension by Helium-like Ions, *Mod. Phys. Lett. A* **23** (2008) 1853.
- [2] Chavdar Velchev, Rosen Pavlov, Lyubomir Mihailov, Nicola Chamel, Zhivko Stoyanov, Yulia Mutafchieva, Maria Ivanovich, *Comptes rendus de l'Académie bulgare des Sciences* **67** (11) (2014).