Abstract Submitted
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Shannon Information Entropy for Two-Electron Systems in Position Space[1] Y.K. HO, CHIEN-HAO LIN, Institute of Atomic and Molecular Sciences, Taiwan — Entropic measures provide analytic tools to help us understand correlations in quantum systems. In our previous works, we have calculated linear entropy and von Neumann entropy as entanglement measures for ground state and lower-lying excited states in helium-like systems [1]. Here in this work, we adopt another entropic measure, the Shannon entropy [2], to probe the nature of correlation effects. At the meeting we will show our results of Shannon entropy in position space for the singlet ground states of helium-like systems including helium, positronium negative ion, hydrogen negative ion, and lithium positive ion, as well as results for systems with nucleus charge around the ionization threshold.

[1] Y.-C. Lin, C.-Y. Lin, and Y. K. Ho, *Phys. Rev. A* **87**, 022316 (2013); C. H. Lin, Y.-C. Lin, and Y. K. Ho, *Few-Body Syst.* **54**, 2147 (2013); C. H. Lin and Y. K. Ho, *Few-Body Syst.* **55**, 1141 (2014); C. H. Lin and Y. K. Ho, *Phys. Lett. A* **378**, 2861 (2014);
[2] C. E. Shannon, *Bell Syst. Tech. J.* **27**, 379 (1948).

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Y. K. Ho
Institute of Atomic and Molecular Sciences, Taiwan

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