Copy of a printed graph referenced as "Density at points along the nuclear axis for the attractive and repulsive states of H+2"

Contributors

Fuller, Watson, 1935-

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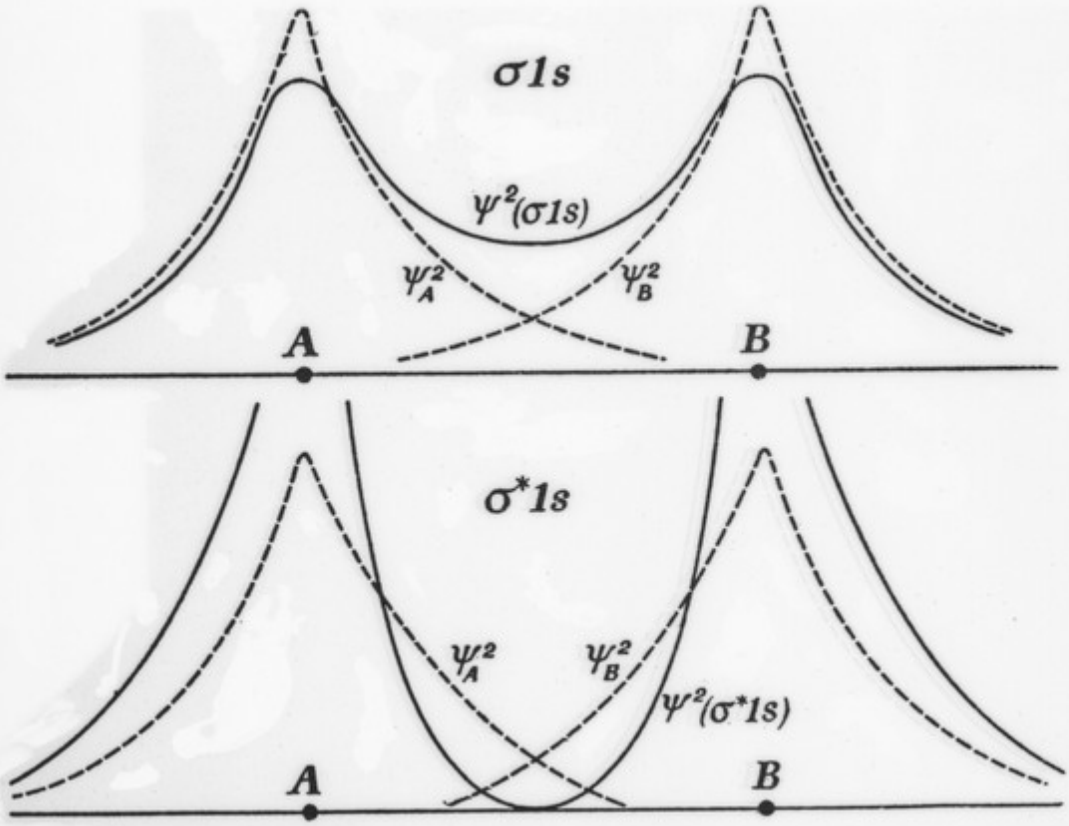
Fig. 4 shows contours of constant ψ^2, i.e. charge-cloud density, or probability. The plane of the paper is any plane through the nuclei A and B. Even though more accurate wave functions would change the shapes of these contours slightly, these diagrams are substantially correct. Fig. 5 shows the value of ψ^2 at points along the nuclear axis, and also the values of ψ_A^2 and ψ_B^2 for com-



The density ψ^2 at points along the nuclear axis for the attractive $\sigma 1s$ and the repulsive σ^*1s states of H_2^+. [No screening constant introduced here.]

parison, though these latter are drawn to half scale. This is to enable us to co[redacted] with the sum of the atomic densities [redacted] that

(i) in a bonding orbital the charge is concentrated rather more between the nuclei than would be expected by superposition of the component a.o. densities;

(ii) in a bonding orbital the lateral spread is not very great [redacted] charge-cloud is less