



Figure 10.9 Wave functions  $\Phi_g$  and  $\Phi_u$  ((a) and (b)) and electron probability densities  $|\Phi_g|^2$ ,  $|\Phi_u|^2$  ((c) and (d)) for the hydrogen molecular ion  $H_2^+$ , plotted along the internuclear line to an arbitrary scale. The points A and B represent the positions of the two protons.