



# The $p_{1/2}$ states ( $\kappa=1$ ) and potential

The radial function for the upper components (red) and the lower components (blue) of the  $6p_{1/2}$  state, calculated with the Harmon and Koelling scalar relativistic equation (lighter), the Dirac equation (darker), and the Schrödinger equation (dashed). Note the discrepancy at the origin.

