

## High precision calculations for helium and helium-like ions

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We will present the current status of QED theory of the helium atom in comparison to precision experimental results. We observe perfect agreement for  $2^3S - 2^3P$  transition using the newly obtained muonic helium nuclear charge radius. We also observe excellent agreement for  $2^3S$  hyperfine splitting. However, we observe significant disagreements for  $2^3S$  and  $2^3P$  ionization energies and for the difference of nuclear charge radii obtained from isotope shifts.