CHAPTER OVERVIEW

10: Addition of Angular Momentum

Consider an electron in a hydrogen atom. As we have already seen, the electron's motion through space is parameterized by the three quantum numbers n, l, and m. (See Section [s10.4].) To these we must now add the two quantum numbers s and m_s that parameterize the electron's internal motion. (See the previous chapter.) Now, the quantum numbers l and m specify the electron's orbital angular momentum vector, $\mathbf{L}$, (as much as it can be specified) whereas the quantum numbers s and m_s specify its spin angular momentum vector, $\mathbf{S}$. But, if the electron possesses both orbital and spin angular momentum then what is its total angular momentum?
