

## 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?

[10.1: General Principles of Angular Momentum](#)

[10.2: Angular Momentum in Hydrogen Atom](#)

[10.3: Two Spin One-Half Particles](#)

[10.E: Addition of Angular Momentum \(Exercises\)](#)

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