

## Angular momentum notation

In these lectures, I follow the convention:

- **magnitudes** of angular momenta are always written as  $|\mathbf{L}|$  (and similarly for  $|\mathbf{S}|$  or  $|\mathbf{J}|$ )
- any unadorned letter,  $l$  or  $L$  or  $s$  or  $J$  etc, always means the corresponding **quantum number**
- a further convention is that we often (but not invariably) use lower-case letters ( $l, s, j$ ) when referring to the quantum numbers of a single particle, upper-case ( $L, S, J$ ) for a system of several

**Example:** two particles with orbital-angular-momentum quantum numbers  $l_1$  and  $l_2$

- the quantum number for their total orbital angular momentum is denoted by  $L$  (and the possible values for  $L$  run from  $|l_1 - l_2|$  to  $l_1 + l_2$  in the usual pattern)
- the eigenvalue of the square of the total angular orbital angular momentum of the particles is  $|\mathbf{L}|^2 = L(L+1)\hbar^2$  (not  $L^2$ )