1.3 Multiplettstruktur

Schubkastenprinzip: k Elektronen n Zustände

$$\frac{n\,(n-1)\dots(n-(k-1))}{k!} = \frac{n!}{(n-k)!\,k!} = \binom{n}{k}$$

$$[\Delta, \vec{l}] = 0 \qquad \vec{l} = \vec{r} \times \vec{p} \qquad \frac{1}{i\hbar}\vec{l} = \vec{r} \times \frac{1}{i}\vec{\nabla} = \frac{1}{i}\vec{r} \times \nabla$$
$$[V(r), \vec{l}] = 0 \qquad \nabla \frac{1}{r} = -\frac{\vec{r}}{r^3}$$

m_1	m_{s_1}	m_2	m_{s_2}	M	M_S
1	$\frac{1}{2}$	1	$-\frac{1}{2}$	2	0
		0	$\frac{1}{2}$	1	1
		0	$-\frac{1}{2}$	1	0
		−1	$\frac{1}{2}$	0	1
		−1	$-\frac{1}{2}$	0	0
1	$-\frac{1}{2}$	0	$\frac{1}{2}$	1	0
		−1	$\frac{1}{2}$	0	0
0	$\frac{1}{2}$	0	$-\frac{1}{2}$	0	0

^1D ^3P ^1S

⋮