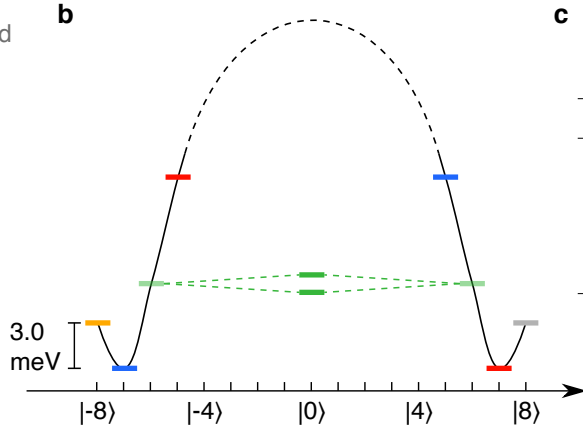
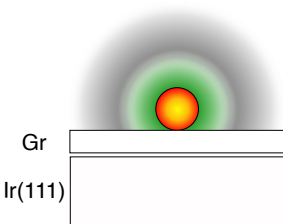


a 6s5d shell: non-polarized
4f shell: polarized

$$|M\rangle = |j_{4f}\rangle$$

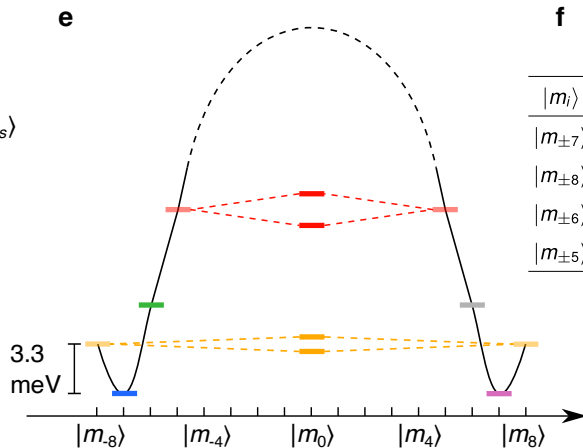
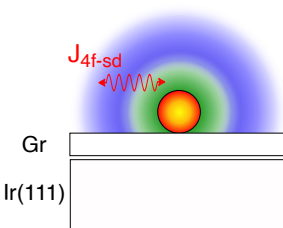


c

$ M\rangle$	j_{4f}	s_{5d}	s_{6s}	E (meV)	ω (meV)
$ \pm 7\rangle$	± 7.0	0	0	0	0
$ \pm 8\rangle$	± 8.0	0	0	3.0	0
$ \pm 6\rangle$	0	0	0	5.5	$1.3 \cdot 10^{-2}$
$ \pm 5\rangle$	± 5.0	0	0	0	0

d 6s5d shell: polarized
4f shell: polarized

$$|M\rangle = |m_i\rangle = |j_{4f}, s_{5d}, s_{6s}\rangle$$



f

$ m_i\rangle$	j_{4f}	s_{5d}	s_{6s}	E (meV)	ω (meV)
$ m_{\pm 7}\rangle$	± 7.1	± 0.5	± 0.5	0	0
$ m_{\pm 8}\rangle$	0	0	0	3.3	$2.4 \cdot 10^{-5}$
$ m_{\pm 6}\rangle$	± 6.3	± 0.4	± 0.4	5.8	0
$ m_{\pm 5}\rangle$	0	0	0	13.5	$6.0 \cdot 10^{-2}$