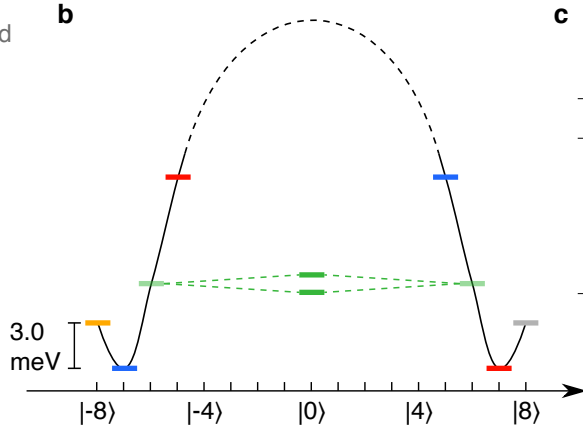
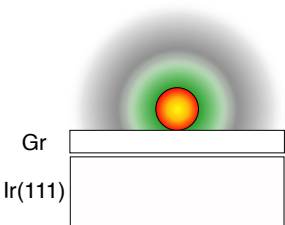


**a** 6s5d shell: non-polarized  
4f shell: polarized

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

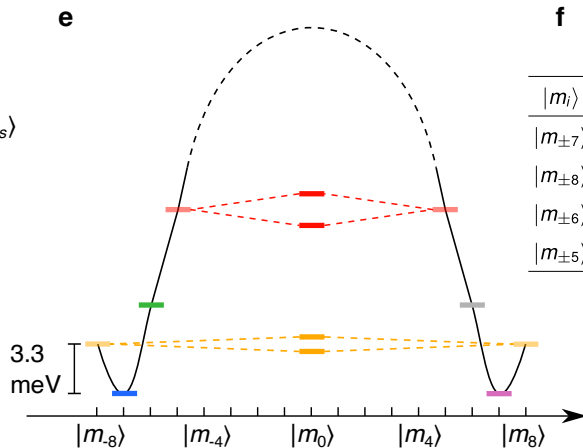
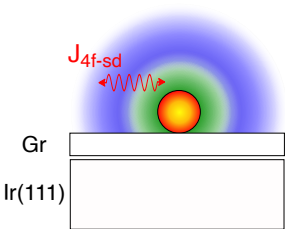


**c**

$ M\rangle$	$j_{4f}$	$s_{5d}$	$s_{6s}$	$E$ (meV)	$\omega$ (meV)
$ \pm 7\rangle$	$\pm 7.0$	0	0	0	0
$ \pm 8\rangle$	$\pm 8.0$	0	0	3.0	0
$ \pm 6\rangle$	0	0	0	5.5	$1.3 \cdot 10^{-2}$
$ \pm 5\rangle$	$\pm 5.0$	0	0	12.5	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)	$\omega$ (meV)
$ m_{\pm 7}\rangle$	$\pm 7.1$	$\pm 0.5$	$\pm 0.5$	0	0
$ m_{\pm 8}\rangle$	0	0	0	3.3	$2.4 \cdot 10^{-5}$
$ m_{\pm 6}\rangle$	$\pm 6.3$	$\pm 0.4$	$\pm 0.4$	5.8	0
$ m_{\pm 5}\rangle$	0	0	0	13.5	$6.0 \cdot 10^{-2}$