Minimal ingredients for orbital-texture switches at Dirac points in strong spin–orbit coupled materials

J   A Wa   [1], T   a N   [1], S   Pa a [1], Q a L [2], X   Z a [2], A   Z   [2] a   Da   S D   a [1,2]

RESULTS

$$H_{\text{SOC}} = \frac{a}{2} \vec{L} \cdot \vec{S}$$

$$= \frac{a}{2} \begin{pmatrix} 0 & 0 & -i & 0 & 0 & 1 \\ 0 & 0 & 0 & i & -1 & 0 \\ i & 0 & 0 & 0 & 0 & -i \\ 0 & -i & 0 & 0 & -i & 0 \\ 0 & -1 & 0 & i & 0 & 0 \\ 1 & 0 & i & 0 & 0 & 0 \end{pmatrix}$$