

Quiz 10

Monday, May 1, 2017 10:37 AM

Calculating Dispersion Relations for LCAO states

The dispersion relation, $E(\vec{k})$, for 2d LCAO states contains factors $\vec{k} \cdot (\vec{R}_{\text{near}} - \vec{R}')$, where $\vec{k} = \begin{bmatrix} k_x \\ k_y \end{bmatrix}$.

\vec{R}_{near} is any lattice vector pointing to a nearest neighbor of \vec{R}' . Find all possible values of $\vec{k} \cdot (\vec{R}_{\text{near}} - \vec{R}')$ for the triangular Bravais lattice shown below.

