

(12)

$$-\sqrt{3}/3 = (m+\mu)\sqrt{3}/2 \quad (1)$$

$$0 = -(n+\lambda) - (m+\mu) \cdot \frac{1}{2} \quad (2)$$

$$\text{from (1)} \quad (m+\mu) = \frac{2}{\sqrt{3}} \cdot \frac{-\sqrt{3}}{3} = -\frac{2}{3}$$

$$\text{from (2)} \quad (n+\lambda) = -\frac{(m+\mu)}{2} = -\frac{1}{2} \cdot \frac{-2}{3} = \frac{1}{3}$$

$$\therefore n+\lambda = \frac{1}{3} \Rightarrow n=0, \lambda = \frac{1}{3}$$

\therefore offset of c is $(\frac{1}{3}, \frac{1}{3})$. $L(a, b)$ is hexagonal but the height of c above $L(a, b)$ is $\frac{\sqrt{3}}{3} \neq \frac{\|a\|}{\sqrt{6}}$ or $\frac{\sqrt{2}}{3} \|a\|$

$\therefore L(d, e, f)$ is trigonal. \times

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$$\text{Let } L(e-f, 2f-d, d-e) = L(\underline{a}, \underline{b}, \underline{c})$$

$L(\underline{a}, \underline{b})$ is hexagonal

Offset of \underline{c} relative to $\{\underline{a}, \underline{b}\}$ is $(\frac{1}{3}, \frac{1}{3})$

$$\text{Vertical separation} = \frac{\sqrt{2}}{3} \|\underline{a}\|$$

Hence it is face-centred cubic