$$\begin{aligned}
\phi &= \mathrm{rad}(lon) \\
\theta &= \mathrm{rad}(lat)
\end{aligned}$$

$$\vec{\mathrm{v}} = \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} r\cos(\theta)\cos(\phi) \\ r\cos(\theta)\sin(\phi) \\ r\sin(\theta) \end{bmatrix}$$

$$\begin{aligned}
B &= \{\vec{v}_1, \ldots, \vec{v}_m\} \\
B &= \left\{ \begin{bmatrix} v_{1_1} \\ \vdots \\ v_{1_n} \end{bmatrix}, \ldots, \begin{bmatrix} v_{m_1} \\ \vdots \\ v_{m_n} \end{bmatrix} \right\} \\
\overrightarrow{b_{avg}} &= \begin{bmatrix} \mathrm{avg}(v_{1_1}, \ldots, v_{m_1}) \\ \vdots \\ \mathrm{avg}(v_{1_n}, \ldots, v_{m_n}) \end{bmatrix}
\end{aligned}$$

$$\begin{aligned}
\triangle UVW &= \left\{ \begin{bmatrix} x_u \\ y_u \end{bmatrix}, \begin{bmatrix} x_v \\ y_v \end{bmatrix}, \begin{bmatrix} x_w \\ y_w \end{bmatrix} \right\} \\
x_p &= u\,x_u + v\,x_v + w\,x_w \\
y_p &= u\,y_u + v\,y_v + w\,y_w \\
\vec{p} &= \begin{bmatrix} x_p \\ y_p \end{bmatrix}
\end{aligned}$$

$$\begin{aligned}
u &= \frac{(y_v - y_w)(x_p - x_w) + (x_w - x_v)(y_p - y_w)}{(y_v - y_w)(x_u - x_w) + (x_w - x_v)(y_u - y_w)} \\
v &= \frac{(y_w - y_u)(x_p - x_w) + (x_u - x_w)(y_p - y_w)}{(y_v - y_w)(x_u - x_w) + (x_w - x_v)(y_u - y_w)} \\
w &= 1 - u - v
\end{aligned}$$

$$\begin{aligned}
V &= \{\vec{v}_1, \ldots, \vec{v}_i, \ldots, \vec{v}_m\} \\
&= \left\{ \begin{bmatrix} v_{1_1} \\ \vdots \\ v_{1_j} \\ \vdots \\ v_{1_n} \end{bmatrix}, \ldots, \begin{bmatrix} v_{i_1} \\ \vdots \\ v_{i_j} \\ \vdots \\ v_{i_n} \end{bmatrix}, \ldots, \begin{bmatrix} v_{m_1} \\ \vdots \\ v_{m_j} \\ \vdots \\ v_{m_n} \end{bmatrix} \right\} \\
\omega_i &= \mathrm{mort}(\vec{v}_i) \\
&= \mathrm{mort}(v_{i_1}, \ldots, v_{i_j}, \ldots, v_{i_n}) \\
\mathrm{home}_\omega(V) &= \{\omega_1, \ldots, \omega_i, \ldots, \omega_m\}
\end{aligned}$$