$$
\mathbf{e}_{\mathcal{B}} = \begin{bmatrix} \delta\alpha^{b_k}_{b_{k+1}} \\ \delta\boldsymbol{\theta}^{b_k}_{b_{k+1}} \\ \delta\beta^{b_k}_{b_{k+1}} \\ \delta\mathbf{b}_a \\ \delta\mathbf{b}_g \end{bmatrix} = \begin{bmatrix} \mathbf{R}^{b_k}_w(\mathbf{p}^w_{b_{k+1}} - \mathbf{p}^w_{b_k} - \mathbf{v}^w_{b_k}\Delta t_k + \frac{1}{2}\mathbf{g}^w\Delta t_k^2) - \hat{\alpha}^{b_k}_{b_{k+1}} \\ 2\left[\left(\hat{\gamma}^{b_k}_{b_{k+1}}\right)^{-1} \otimes (\mathbf{q}^w_{b_k})^{-1} \otimes \mathbf{q}^w_{b_{k+1}}\right]_{xyz} \\ \mathbf{R}^{b_k}_w(\mathbf{v}^w_{b_{k+1}} - \mathbf{v}^w_{b_k} + \mathbf{g}^w\Delta t_k) - \hat{\beta}^{b_k}_{b_{k+1}} \\ \mathbf{b}_{a_{k+1}} - \mathbf{b}_{a_k} \\ \mathbf{b}_{g_{k+1}} - \mathbf{b}_{g_k} \end{bmatrix} \tag{1}
$$