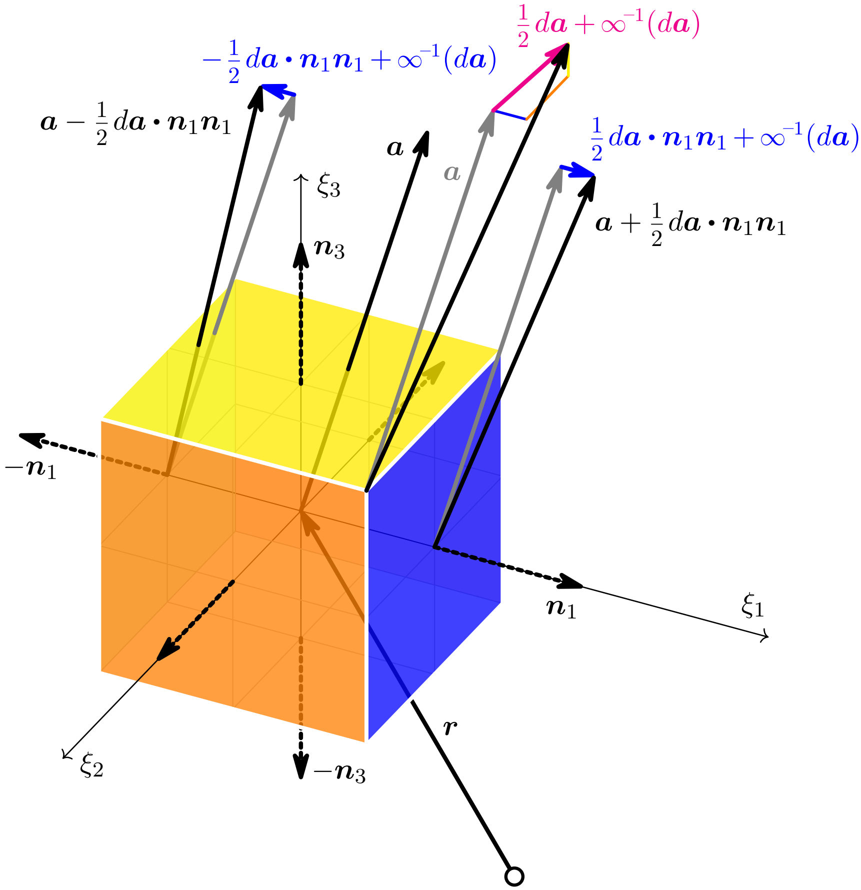

$$\sum_{i=1}^{3}\left(\boldsymbol{a}+\tfrac{1}{2}\,d\boldsymbol{a}\cdot\boldsymbol{n}_i\boldsymbol{n}_i\right)\cdot\boldsymbol{n}_i\,d\mathcal{O}_i+\sum_{i=1}^{3}\left(\boldsymbol{a}-\tfrac{1}{2}\,d\boldsymbol{a}\cdot\boldsymbol{n}_i\boldsymbol{n}_i\right)\cdot(-\boldsymbol{n}_i)\,d\mathcal{O}_i=$$

$$=d\boldsymbol{a}\cdot\boldsymbol{n}_i\,d\mathcal{O}_i=da_i\,d\mathcal{O}_i$$

$$\sum_{i=1}^{3}\left(\boldsymbol{a}+\tfrac{1}{2}\,d\boldsymbol{a}\cdot\boldsymbol{n}^i\boldsymbol{n}_i\right)\cdot\boldsymbol{n}^i\,d\mathcal{O}_i+\sum_{i=1}^{3}\left(\boldsymbol{a}-\tfrac{1}{2}\,d\boldsymbol{a}\cdot\boldsymbol{n}^i\boldsymbol{n}_i\right)\cdot(-\boldsymbol{n}^i)\,d\mathcal{O}_i=$$

$$=d\boldsymbol{a}\cdot\boldsymbol{n}^i\,d\mathcal{O}_i=da^i\,d\mathcal{O}_i$$

$$\boldsymbol{r} = \boldsymbol{r}(\xi^i) \not\equiv \text{linear}\ \xi_i \boldsymbol{n}_i,\ \boldsymbol{n}_i = \frac{\partial \boldsymbol{r}}{\partial \xi^i} = \partial_i \boldsymbol{r},\ d\boldsymbol{r} = d\xi^i \boldsymbol{n}_i,\ \boldsymbol{\nabla} = \boldsymbol{n}^i \partial_i$$
$$\boldsymbol{a} = a^i \boldsymbol{n}_i,\ d\boldsymbol{a} = da^i \boldsymbol{n}_i$$
$$d\boldsymbol{a} = d\boldsymbol{r} \cdot \boldsymbol{\nabla} \boldsymbol{a} = d\xi^i \boldsymbol{n}_i \cdot \boldsymbol{n}^j \partial_j \boldsymbol{a} = d\xi^i \partial_i \boldsymbol{a} = \frac{\partial \boldsymbol{a}}{\partial \xi^i} d\xi^i$$
$$d\boldsymbol{a} \cdot \boldsymbol{n}^i = d\xi^h \partial_h \boldsymbol{a} \cdot \boldsymbol{n}^i = d\xi^h \partial_h a^i = \frac{\partial a^i}{\partial \xi^h} d\xi^h = da^i$$
$$d\boldsymbol{a} \cdot \boldsymbol{E} = d\boldsymbol{a} \cdot \tfrac{1}{2} \boldsymbol{n}^i \in_{ijk} \boldsymbol{n}^j \times \boldsymbol{n}^k = d\boldsymbol{a} \cdot \tfrac{1}{2} \boldsymbol{n}^i \in_{ijk} \in^{jkh} \boldsymbol{n}_h = d\boldsymbol{a} \cdot \boldsymbol{n}^i \boldsymbol{n}_i$$

$$\hat{\boldsymbol{n}} = ?$$

$$\boldsymbol{n}^i d\mathcal{O}_i = \boldsymbol{n}^i \boldsymbol{n}_i \cdot d\xi^j \boldsymbol{n}_j \times d\xi^k \boldsymbol{n}_k,\ d\mathcal{O}_i = \in_{ijk} d\xi^j d\xi^k$$

$$d\boldsymbol{a} \cdot \boldsymbol{n}^i d\mathcal{O}_i = d\boldsymbol{a} \cdot \boldsymbol{n}^i \boldsymbol{n}_i \cdot d\xi^j \boldsymbol{n}_j \times d\xi^k \boldsymbol{n}_k = da^i \in_{ijk} d\xi^j d\xi^k$$

$$d\mathcal{V} = d\xi^i \boldsymbol{n}_i \times d\xi^j \boldsymbol{n}_j \cdot d\xi^k \boldsymbol{n}_k = \in_{ijk} d\xi^i d\xi^j d\xi^k$$

$$\boldsymbol{\nabla} \cdot \boldsymbol{a}\, d\mathcal{V} = \boldsymbol{n}^i \partial_i \cdot a^j \boldsymbol{n}_j\, d\mathcal{V} = \partial_i a^i d\mathcal{V}$$

$$da^i d\mathcal{O}_i = da^i d\xi^j d\xi^k \in_{ijk} = d\xi^h \partial_h a^i d\xi^j d\xi^k \in_{ijk}$$
$$\partial_h a^h d\mathcal{V} = \partial_h a^h d\xi^i d\xi^j d\xi^k \in_{ijk}$$

$$\partial_h a^i d\xi^h d\xi^j d\xi^k \in_{ijk} \quad \partial_h a^h d\xi^i d\xi^j d\xi^k \in_{ijk}$$

$$\begin{gathered}
\partial_h a^i d\xi^h d\xi^j d\xi^k \in_{ijk} = \\
= \partial_h a^1 d\xi^h d\xi^2 d\xi^3 \in_{123} + \partial_h a^1 d\xi^h d\xi^3 d\xi^2 \in_{132} + \\
+ \partial_h a^2 d\xi^h d\xi^3 d\xi^1 \in_{231} + \partial_h a^2 d\xi^h d\xi^1 d\xi^3 \in_{213} + \\
+ \partial_h a^3 d\xi^h d\xi^1 d\xi^2 \in_{312} + \partial_h a^3 d\xi^h d\xi^2 d\xi^1 \in_{321} = \\
= \partial_h a^1 d\xi^h d\xi^2 d\xi^3 \in_{123} - \partial_h a^1 d\xi^h d\xi^3 d\xi^2 \in_{123} + \\
+ \partial_h a^2 d\xi^h d\xi^3 d\xi^1 \in_{123} - \partial_h a^2 d\xi^h d\xi^1 d\xi^3 \in_{123} + \\
+ \partial_h a^3 d\xi^h d\xi^1 d\xi^2 \in_{123} - \partial_h a^3 d\xi^h d\xi^2 d\xi^1 \in_{123}
\end{gathered}$$