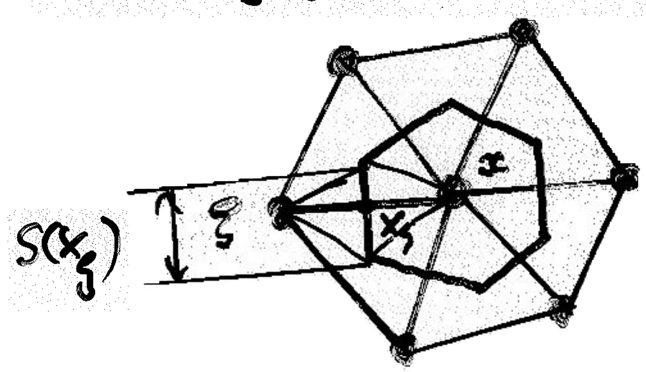
Schätzen beispielsweise

1) $|(\psi_{H},z)| \le \dots$

der Einfachheit halber unter der Vor. $a=\bar{a}=1$ ab:

$$(\psi_{H},z) = \sum_{x\in\omega}{}' \psi_H(x)\, z(x)\, H(x) =$$

$$= \sum_{x\in\omega}{}' \left\{ \sum_{\xi\in S'(x)}{}' \left[-\frac{u(\xi)-u(x)}{h(x,\xi)}\, s(x_\xi) + \int_{\varsigma(x,\xi)} \frac{\partial u}{\partial n}\, ds \right] \right\} z(x)$$



$$= \sum_{x_\xi}{}' \underbrace{\left[\frac{1}{s(x_\xi)} \int_{\varsigma(x_\xi)} \frac{\partial u}{\partial n}\, ds - \frac{u(\xi)-u(x)}{h(x,\xi)} \right]}_{=:\,\varkappa(x_\xi)} \frac{z(\xi)-z(x)}{h(x,\xi)}\, \overbrace{h(x,\xi)\, s(x_\xi)}^{H'(x)}$$

$$= \sum_{x_\xi}{}' \varkappa(x_\xi)\, z_{\bar{x}}(x_\xi)\, H'(x_\xi)$$

$$\Rightarrow |(\psi_{H},z)| \le \sqrt{\sum_{x_\xi} \varkappa^2(x_\xi) H'(x_\xi)}\, \sqrt{\sum_{x_\xi} z_{\bar{x}}^2(x_\xi) H'(x_\xi)}$$

$$\le \sqrt{\sum_{x_\xi} \varkappa^2(x_\xi) H'(x_\xi)}\, \|z\|_{\mathring{W}_2^1(\omega)}$$

Bramble & Hilbert

$$\le c\, h\, |u|_{2,\Omega}\, \|z\|_{\mathring{W}_2^1(\omega)}$$