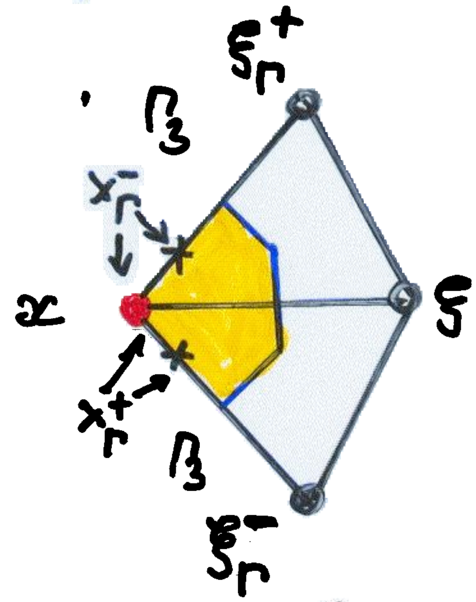
Remark 3.5: on piecewise continous $\varkappa$ and g

$\partial\gamma_n = \partial\gamma_3(x)$



$$h(x) = \frac{1}{2}\left[h(x,\xi_r^-) + h(x,\xi_r^+) \right]$$

$$\bar{\varkappa}(x) = \frac{1}{2h(x)}\left\{ h(x,\xi_r^-)\varkappa(x_r^-) + h(x,\xi_r^+)\varkappa(x_r^+) \right\} + \frac{H(x)}{h(x)}\bar{c}(x)$$

- $(6)_L$ and $(6)_e$ yield DS $A_h(x)u_h(x) = b_h(x),\ x \in \bar{\omega}_h$

$\qquad\qquad\qquad\qquad\quad \parallel$

System of FD Equations = ES $\quad A_h \underline{u}_h = \underline{b}_h$

(6)

$$\boxed{\begin{array}{ll} \text{Find } u_h(\cdot) = v(\cdot) : \bar{\omega} \longrightarrow \mathbb{R}^1 : & \\ \left.\begin{array}{l} L_h u_h(x) = f_h(x),\ x \in \overset{\circ}{\omega} \\ \ell_h u_h(x) = g_h(x),\ x \in \gamma_n = \gamma_2 \cup \gamma_3 \end{array}\right\} & \hat{L}_h u_h(x) = \hat{f}_h(x),\ x \in \omega_h \\ \quad u_h(x) = g_1(x),\ x \in \gamma_e = \gamma_1 \ \} & u_h(x) = g_1(x),\ x \in \gamma_h \end{array}}$$

- $\boxed{E\,3.2}$ If $\bar{a}(x) > 0\ \forall x \in \omega$

$\bar{c}(x) \geq 0\ \forall x \in \omega$ (resp. > 0 in ω) and

$\bar{\varkappa}(x) \geq 0\ \forall x \in \gamma_n$ (resp. > 0 in $\gamma_n = \gamma_3$),

then the DS (6) is monotone

(resp. strongly monotone) !