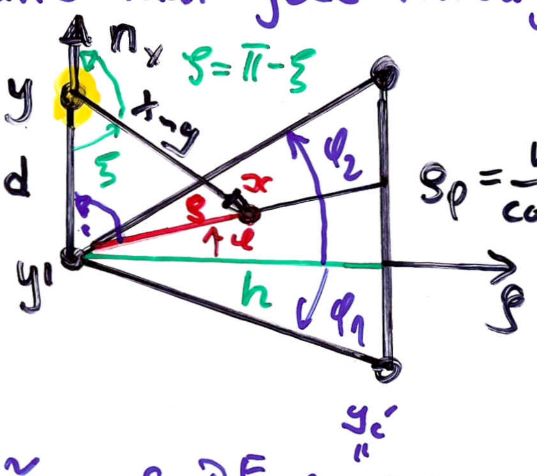
2. y is located on the straight line that is orthogonal to the plane $E(\Gamma_j) \supset \Gamma_j$ and that goes through a vertex of the triangle Γ_j:



$\varrho_\varphi = \frac{h}{\cos\varphi}$

$$y = y_i = \vec{y}_i$$

$$\cos\angle(x-y, n_x) = \cos\varrho = \overset{(*)}{=} -\cos\xi = -\frac{d}{|x-y|}$$

$$\tilde{b}_y = \int_{\Gamma_j} \frac{\partial E}{\partial n_x}(x,y)\, ds_x = -\frac{1}{4\pi}\int_{\Gamma_j} \frac{(x-y, n_x(x))}{|x-y|^3}\, ds_x$$

$$= -\frac{1}{4\pi}\int_{\Gamma_j} \frac{\cos\angle(x-y,n_x)}{|x-y|^2}\, ds_x$$

$$(x-y, n_x) = \cos\angle(x-y,n_x)\cdot|x-y|\cdot\underbrace{|n_x|}_{1}$$

$$\overset{(*)}{=} \frac{d}{4\pi}\int_{\Gamma_j}\frac{ds_x}{|x-y|^3} = \frac{d}{4\pi}\int_{\varphi_1}^{\varphi_2}\int_0^{h/\cos\varphi}\frac{\varrho\, d\varrho\, d\varphi}{\left(\sqrt{\varrho^2+d^2}\right)^3}$$

$$d^2+\varrho^2 = |x-y|^2$$

$$\overset{(\uparrow)}{=} -\frac{d}{4\pi}\int_{\varphi_1}^{\varphi_2}\frac{d\varphi}{\sqrt{\varrho^2+d^2}}\Bigg|_0^{\frac{h}{\cos\varphi}} = -\frac{d}{4\pi}\left[\int_{\varphi_1}^{\varphi_2}\frac{d\varphi}{\sqrt{\frac{h^2}{\cos^2\varphi}+d^2}} - \int_{\varphi_1}^{\varphi_2}\frac{d\varphi}{|d|}\right]$$

$$= -\frac{d}{4\pi}\left[\int_{\varphi_1}^{\varphi_2}\frac{\cos\varphi\, d\varphi}{\sqrt{h^2+d^2\underbrace{\cos^2\varphi}_{1-\sin^2\varphi}}} - \frac{1}{|d|}(\varphi_2-\varphi_1)\right] \overset{(mms)}{=} \ldots$$

$$= -\frac{1}{4\pi}\frac{d}{\sqrt{h^2+d^2}}\int_{\varphi_1}^{\varphi_2}\frac{d(\sin\varphi)}{\sqrt{1-\frac{d^2}{h^2+d^2}\sin^2\varphi}} + \frac{1}{4\pi}\,\mathrm{sgn}(d)(\varphi_2-\varphi_1)$$

$$\varkappa^2 = \frac{d^2}{h^2+d^2} < 1$$

$$= -\frac{1}{4\pi}\int_{\varphi_1}^{\varphi_2}\frac{d(\varkappa\sin\varphi)}{\sqrt{1-(\varkappa\sin\varphi)^2}} + \frac{1}{4\pi}\,\mathrm{sgn}(d)(\varphi_2-\varphi_1)$$

$$= -\frac{1}{4\pi}\arcsin(\varkappa\sin\varphi)\Big|_{\varphi_1}^{\varphi_2} + \frac{1}{4\pi}\,\mathrm{sgn}(d)(\varphi_2-\varphi_1).$$