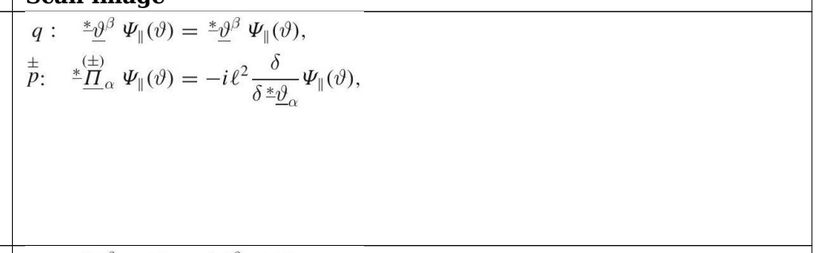
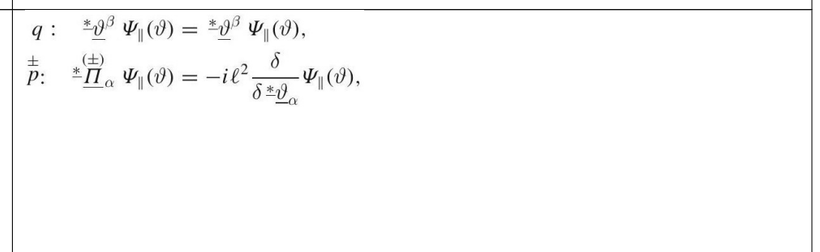
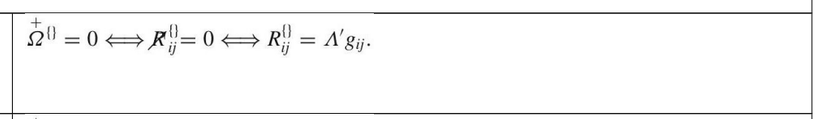
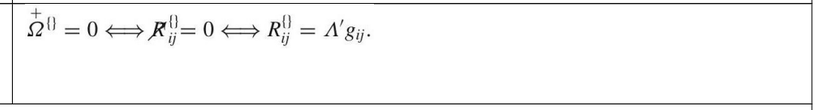
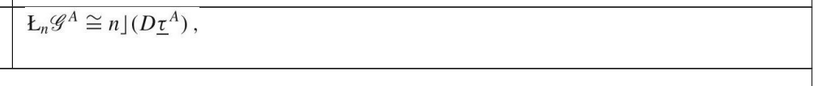
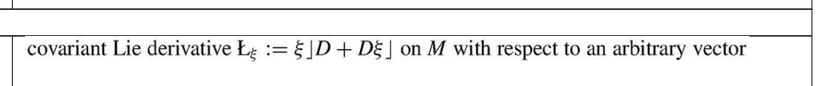
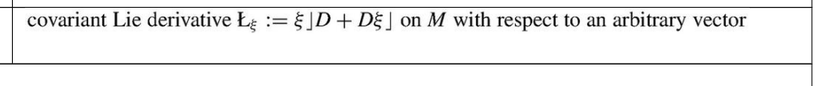
mielke-geometrodynamics: residuals

equations measured 2026-09-12T17:00:03Z against the model of 2026-09-12

Corrected (5)

Identifier	Page	Conf.	LaTeX source	Rendered	Scan image
mielke-geometrodynamics_EQ0402 (was)	134	■ 0.042	`\begin{array}{ll} q: & \underline{*}^{\vartheta^{ \beta}} \Psi_{|}(\vartheta)=\underline{*}^{\prime} \underline{\vartheta}^{\beta} \Psi_{|}(\vartheta), \\ \stackrel{ \pm}{p}: & \stackrel{*}{+}_{\underline{\Pi}} \Psi_{|}(\vartheta)=-i \ell^{2} \frac{\delta}{\delta \underline{*}_{\alpha}} \Psi_{|}(\vartheta), \end{array}`	$q: \quad \underline{*}^{\vartheta^{\beta}} \Psi_{\|}(\vartheta)=\underline{*}^{\prime} \underline{\vartheta}^{\beta} \Psi_{\|}(\vartheta),$ $\stackrel{\pm}{p}: \quad \stackrel{*}{+}_{\underline{\Pi}} \Psi_{\|}(\vartheta)=-i \ell^{2} \frac{\delta}{\delta \underline{*}_{\alpha}} \Psi_{\|}(\vartheta),$	
mielke-geometrodynamics_EQ0402 (now)	134	—	`\begin{array}{ll} q: & \stackrel{*}{\underline{ \vartheta}}^{\beta} \Psi_{|}(\vartheta) = \stackrel{*'}{ \underline{\vartheta}}^{\beta} \Psi_{|}(\vartheta), \ \ \stackrel{\pm}{p}: & \stackrel{*^{(\pm)}}{\underline{ \Pi}_{\alpha}} \Psi_{|}(\vartheta) = -i\ell^{2} \frac{ \delta}{\delta \stackrel{*}{\underline{\vartheta}}_{ \alpha}} \Psi_{|}(\vartheta), \end{array}`	$q: \quad \stackrel{*}{\underline{\vartheta}}^{\beta} \Psi_{\|}(\vartheta) = \stackrel{*'}{\underline{\vartheta}}^{\beta} \Psi_{\|}(\vartheta),$ $\stackrel{\pm}{p}: \quad \stackrel{*^{(\pm)}}{\underline{\Pi}}_{\alpha} \Psi_{\|}(\vartheta) = -i\ell^{2} \frac{\delta}{\delta \stackrel{*}{\underline{\vartheta}}_{\alpha}} \Psi_{\|}(\vartheta),$	
basis: inferred / ink					
mielke-geometrodynamics_EQ0472 (was)	155	■ 0.682	`\stackrel{+}{\Omega}^{(t)}=0 \Longleftrightarrow R_{i j}^{\{ \}}=0 \Longleftrightarrow R_{i j}^{\{ \}}= \Lambda^{\prime} g_{i j} .`	*(not rendered)*	
mielke-geometrodynamics_EQ0472 (now)	155	—	`\stackrel{+}{\Omega}^{(t)}=0 \Longleftrightarrow R_{i j}^{\{ \}}=0 \Longleftrightarrow R_{i j}^{\{ \}}= \Lambda^{\prime} g_{i j} .`	$\stackrel{+}{\Omega}^{(t)}=0 \Longleftrightarrow R_{i j}^{\{\}}=0 \Longleftrightarrow R_{i j}^{\{\}}=\Lambda^{\prime} g_{i j}.$	
basis: census / census					
mielke-geometrodynamics_EQ0857 (was)	278	■ 0.925	`\left.\mathbf{Ł}_{n} \mathscr{G}^{A} \cong n\right \rfloor\left(D \underline{\tau}^{A}\right),`	*(not rendered)*	
mielke-geometrodynamics_EQ0857 (now)	278	—	`\left.\mathbf{Ł}_{n} \mathscr{G}^{A} \cong n\right\rfloor \left(D \underline{\tau}^{A}\right),`	$\text{Ł}_{n} \mathscr{G}^{A} \cong n \rfloor\left(D \underline{\tau}^{A}\right),$	
basis: census / census					
mielke-geometrodynamics_EQ0972 (was)	314	■ 0.153	`\stackrel{\text { (ↄ) }}{D} \alpha:=\stackrel{\text { (o) }}{d} \alpha-\omega^{g} \wedge \alpha-\alpha \wedge \stackrel{\circ}{\circ}`	$\stackrel{(ↄ)}{D} \alpha:=\stackrel{(o)}{d} \alpha-\omega^{g} \wedge \alpha-\alpha \wedge \stackrel{\circ}{\circ}$	
mielke-geometrodynamics_EQ0972 (now)	314	—	`\overset{(1)}{D}\alpha:=\overset{(0)}{d}\alpha-\omega^{g} \wedge\alpha-\alpha\wedge\omega^{g}`	$\overset{(1)}{D}\alpha:=\overset{(0)}{d}\alpha-\omega^{g}\wedge\alpha-\alpha\wedge\omega^{g}$	
basis: inferred / ink					
mielke-geometrodynamics_F00431 (was)	100	—	`\mathrm{ł}_{\xi}:=\xi \jmath D+D \xi ⌟`	*(not rendered)*	
mielke-geometrodynamics_F00431 (now)	100	—	`\mathrm{ł}_{\xi}:=\xi \rfloor D+D \xi \rfloor`	$\text{ł}_{\xi}:=\xi \rfloor D+D \xi \rfloor$	
basis: census / census					

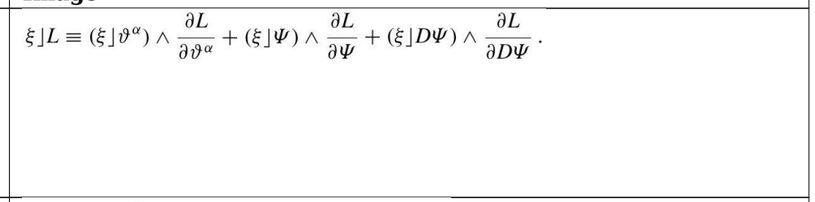
Conf. MathPix confidence: ■ ≥0.9 ■ 0.5–0.9 ■ <0.5 — no value

LaTeX source MathPix's reading, unchanged; **Rendered** the same reading, with a display environment (align/alignat/flalign/eqnarray/gather/multline/split) mapped to its in-math form so it can typeset in this cell — the two may legitimately differ

Residual render vs scan (inkdrill): • C component • W weak • S stable • N noise • K clean • not measured

[refined: *basis*] beside an identifier: the LaTeX-source and Rendered cells both show a VERIFIED refinement, not MathPix's own reading — *basis* names what verified it (e.g. ink, source). The original reading is unchanged in the model but is not the one drawn here.

Low confidence

Identifier	Page	Conf.	LaTeX source	Rendered	Image
mielke-geometrodynamics_EQ0293 (4.5.4) **[conf 0.052]**	101	■ 0.052 ● N|+0	`\xi \downharpoonleft L \equiv\left(\xi \downharpoonleft \vartheta^{\alpha}\right) \wedge \frac{\partial L}{ \partial \vartheta^{\alpha}}+(\xi \downharpoonleft \Psi) \wedge \frac{\partial L}{\partial \Psi}+(\xi \downharpoonleft D \Psi) \wedge \frac{\partial L}{ \partial D \Psi} .`	$\xi \rfloor L \equiv (\xi \rfloor \vartheta^{\alpha}) \wedge \frac{\partial L}{\partial \vartheta^{\alpha}} + (\xi \rfloor \Psi) \wedge \frac{\partial L}{\partial \Psi} + (\xi \rfloor D\Psi) \wedge \frac{\partial L}{\partial D\Psi}.$	
mielke-geometrodynamics_EQ0064 (2.8.6) **[conf 0.054]**	47	■ 0.054 ● N|-2	`\begin{aligned} & \stackrel{*}{\pi}\left(\gamma_{1} \right)=-\frac{1}{2 \pi i} \operatorname{Tr} \Omega \quad(=0) \\ & \stackrel{*}{\pi}\left(\gamma_{2} \right)=-\frac{1}{8 \pi^{2}}\{\operatorname{Tr}(\Omega \wedge \Omega)-\operatorname{Tr}(\Omega) \wedge \operatorname{Tr}(\Omega)\} \\ & \quad\left(=-\frac{1}{32 \pi^{2}} \epsilon^{\alpha \beta \mu \nu} F_{\alpha \beta}{}^{j} F_{\mu \nu j} \sqrt{|g|} d^{4} x\right) \\ & * \pi^{2}\left(\gamma_{k}\right)=0 \text { for } k \geq 3 . \end{aligned}`	$\begin{aligned} & \overset{*}{\pi}\left(\gamma_{1}\right)=-\frac{1}{2 \pi i} \operatorname{Tr} \Omega \quad(=0) \\ & \overset{*}{\pi}\left(\gamma_{2}\right)=-\frac{1}{8 \pi^{2}}\{\operatorname{Tr}(\Omega \wedge \Omega)-\operatorname{Tr}(\Omega) \wedge \operatorname{Tr}(\Omega)\} \\ & \quad\left(=-\frac{1}{32 \pi^{2}} \epsilon^{\alpha \beta \mu \nu} F_{\alpha \beta}{}^{j} F_{\mu \nu j} \sqrt{|g|} d^{4} x\right) \\ & * \pi^{2}\left(\gamma_{k}\right)=0 \text { for } k \geq 3 . \end{aligned}$	$\begin{aligned} & \overset{*}{\pi}(\gamma_1) = -\frac{1}{2\pi i}\mathrm{Tr}\Omega \quad (=0) \\ & \overset{*}{\pi}(\gamma_2) = -\frac{1}{8\pi^2}\{\mathrm{Tr}(\Omega\wedge\Omega) - \mathrm{Tr}(\Omega)\wedge\mathrm{Tr}(\Omega)\} \\ & \qquad \left(= -\frac{1}{32\pi^2}\epsilon^{\alpha\beta\mu\nu}F_{\alpha\beta}{}^{j}F_{\mu\nu j}\sqrt{|g|}d^4x\right) \\ & \overset{*}{\pi}(\gamma_k) = 0 \quad \text{for} \quad k \geq 3. \end{aligned}$
mielke-geometrodynamics_EQ0400 (6.4.19) **[conf 0.060]**	133	■ 0.060 ● S|+1	`\stackrel{( \pm)}{\mathscr{G}}_{\alpha}:=\stackrel{( \pm)}{\underline{D}}^{( \pm)} \underline{\Pi}_{\alpha}= \stackrel{( \pm)}{\underline{D}} *\stackrel{( \pm)}{\underline{A}}_{\alpha}=0,`	$\overset{(\pm)}{\mathscr{G}}_{\alpha} := \overset{(\pm)}{\underline{D}}{}^{(\pm)} \underline{\Pi}_{\alpha} = \overset{(\pm)}{\underline{D}} * \overset{(\pm)}{\underline{A}}_{\alpha} = 0,$	$\overset{(\pm)}{\mathscr{G}}_{\alpha} := \overset{(\pm)}{\underline{D}}\,\overset{(\pm)}{\underline{\Pi}}_{\alpha} = \overset{(\pm)}{\underline{D}} * \overset{(\pm)}{\underline{\mathscr{A}}}_{\alpha} = 0,$
mielke-geometrodynamics_EQ0718 (10.9.4) **[conf 0.066]**	229	■ 0.066 ● N|+0	`\begin{aligned} \Sigma_{\alpha} & \left.\left.:=e_{ \alpha}\right\rfloor L_{\Psi}-\left(e_{\alpha}\right\rfloor \Psi\right) \wedge \frac{\partial L_{\Psi}}{ \partial \Psi}-\left(e_{\alpha} \downharpoonleft \bar{ \Psi}\right) \wedge \frac{\partial L_{\Psi}}{\partial \bar{\Psi}} \\ & \left.-\left(e_{\alpha}\right\rfloor D \Psi\right) \wedge \frac{\partial L_{\Psi}}{\partial D \Psi}-\left(e_{\alpha} \downharpoonleft D \bar{\Psi} \right) \wedge \frac{\partial L_{\Psi}}{\partial D \bar{\Psi}} ; \end{aligned}`	$\begin{aligned} \Sigma_{\alpha} & :=\left.\left.e_{\alpha}\right\rfloor L_{\Psi}-\left(e_{\alpha}\right\rfloor \Psi\right) \wedge \frac{\partial L_{\Psi}}{\partial \Psi}-\left(e_{\alpha} \downharpoonleft \bar{\Psi}\right) \wedge \frac{\partial L_{\Psi}}{\partial \bar{\Psi}} \\ & \left.-\left(e_{\alpha}\right\rfloor D \Psi\right) \wedge \frac{\partial L_{\Psi}}{\partial D \Psi}-\left(e_{\alpha} \downharpoonleft D \bar{\Psi}\right) \wedge \frac{\partial L_{\Psi}}{\partial D \bar{\Psi}} ; \end{aligned}$	$\begin{aligned} \Sigma_{\alpha} &:= e_{\alpha}\rfloor L_{\Psi} - (e_{\alpha}\rfloor\Psi)\wedge\frac{\partial L_{\Psi}}{\partial\Psi} - (e_{\alpha}\rfloor\overline{\Psi})\wedge\frac{\partial L_{\Psi}}{\partial\overline{\Psi}} \\ &\quad - (e_{\alpha}\rfloor D\Psi)\wedge\frac{\partial L_{\Psi}}{\partial D\Psi} - (e_{\alpha}\rfloor D\overline{\Psi})\wedge\frac{\partial L_{\Psi}}{\partial D\overline{\Psi}}; \end{aligned}$

Conf. MathPix confidence: ■ ≥0.9 ■ 0.5–0.9 ■ <0.5 — no value

LaTeX source MathPix's reading, unchanged; **Rendered** the same reading, with a display environment (align/alignat/flalign/eqnarray/gather/multline/split) mapped to its in-math form so it can typeset in this cell — the two may legitimately differ

Residual render vs scan (inkdrill): ● C component ● W weak ● S stable ● N noise ● K clean ● not measured

[refined: *basis*] beside an identifier: the LaTeX-source and Rendered cells both show a VERIFIED refinement, not MathPix's own reading — *basis* names what verified it (e.g. ink, source). The original reading is unchanged in the model but is not the one drawn here.

Identifier	Page	Conf.	LaTeX source	Rendered	Image
mielke-geometrodynamics_EQ0391 (6.4.6) **[conf 0.066]**	131	■ 0.066 ●	\begin{aligned} \Sigma_{\alpha}:=\frac{\delta L}{\delta \vartheta^{\alpha}}= & \left.\left.e_{\alpha}\right\rfloor L-\left(e_{\alpha} \downharpoonleft D \Psi\right) \wedge \frac{\partial L}{\partial D \Psi}-\left(e_{ \alpha}\right\rfloor \Psi\right) \wedge \frac{\partial L}{\partial \Psi} \\ & -\left(e_{\alpha} \downharpoonleft T^{\beta}\right) \wedge \frac{\partial L}{\partial T^{\beta}}+D \frac{\partial L}{\partial T^{\alpha}}- \left(e_{\alpha} \downharpoonleft R_{\beta}^{\gamma} \right) \wedge \frac{\partial L}{\partial R_{\beta}^{ \gamma}} . \end{aligned}	$$\Sigma_{\alpha} := \frac{\delta L}{\delta \vartheta^{\alpha}} = e_{\alpha} \rfloor L - \left(e_{\alpha} \downharpoonleft D\Psi\right) \wedge \frac{\partial L}{\partial D\Psi} - \left(e_{\alpha} \rfloor \Psi\right) \wedge \frac{\partial L}{\partial \Psi} - \left(e_{\alpha} \downharpoonleft T^{\beta}\right) \wedge \frac{\partial L}{\partial T^{\beta}} + D\frac{\partial L}{\partial T^{\alpha}} - \left(e_{\alpha} \downharpoonleft R^{\gamma}_{\beta}\right) \wedge \frac{\partial L}{\partial R^{\gamma}_{\beta}}.$$	$$\Sigma_{\alpha} := \frac{\delta L}{\delta \vartheta^{\alpha}} = e_{\alpha} \rfloor L - (e_{\alpha} \rfloor D\Psi) \wedge \frac{\partial L}{\partial D\Psi} - (e_{\alpha} \rfloor \Psi) \wedge \frac{\partial L}{\partial \Psi} - (e_{\alpha} \rfloor T^{\beta}) \wedge \frac{\partial L}{\partial T^{\beta}} + D\frac{\partial L}{\partial T^{\alpha}} - (e_{\alpha} \rfloor R_{\beta}{}^{\gamma}) \wedge \frac{\partial L}{\partial R_{\beta}{}^{\gamma}}.$$
mielke-geometrodynamics_EQ0529 (7.7.49) **[conf 0.099]**	168	■ 0.099 ●	\begin{aligned} L_{\text {Euler }}: & =(-1)^{\text {sig+1 }}} \operatorname{Tr}\left\{\Omega \wedge \Omega^{(\star)}\right\}=\frac{(-1)^{\text {sig }}}{2} R^{\alpha \beta} \wedge R_{\alpha \beta}^{(\star)} \\ & =d C_{\mathrm{RR}(\star)}=\frac{(-1)^{\text {sig }}}{2} d\left(\Gamma_{\alpha \beta} \wedge R^{\alpha \beta(\star)}-\frac{1}{3} \Gamma_{\alpha}{ }^{\beta(\star)} \wedge \Gamma_{\beta}{ }^{\gamma} \wedge \Gamma_{\gamma}{ }^{\alpha}\right) \\ & \equiv \frac{1}{2} R_{\alpha \beta} \wedge{ }^{*} R^{\alpha \beta}-2 \operatorname{Ric}_{\alpha \beta} \wedge{ }^{*} \operatorname{Ric}^{\alpha \beta}+\frac{1}{2} \operatorname{Ric}_{\alpha}{ }^{\alpha} \wedge{ }^{*} \operatorname{Ric}_{\beta}{ }^{\beta} \\ & \equiv-L_{\mathrm{SKY}} \\ & -2\left(\operatorname{Ric}_{\alpha \beta} \wedge{ }^{*} \operatorname{Ric}^{\alpha \beta}-\frac{1}{4} \operatorname{Ric}_{\alpha}{ }^{\alpha} \wedge{ }^{*} \operatorname{Ric}_{\beta}{ }^{\beta}\right) \end{aligned}	$$\begin{aligned} L_{\text{Euler}} &:= (-1)^{\text{sig}+1}\,\mathrm{Tr}\left\{\Omega \wedge \Omega^{(\star)}\right\} = \frac{(-1)^{\text{sig}}}{2} R^{\alpha\beta} \wedge R^{(\star)}_{\alpha\beta} \\ &= dC_{\mathrm{RR}^{(\star)}} = \frac{(-1)^{\text{sig}}}{2} d\left(\Gamma_{\alpha\beta} \wedge R^{\alpha\beta(\star)} - \frac{1}{3}\Gamma_{\alpha}{}^{\beta(\star)} \wedge \Gamma_{\beta}{}^{\gamma} \wedge \Gamma_{\gamma}{}^{\alpha}\right) \\ &\equiv \frac{1}{2} R_{\alpha\beta} \wedge {}^{*}R^{\alpha\beta} - 2\,\mathrm{Ric}_{\alpha\beta} \wedge {}^{*}\mathrm{Ric}^{\alpha\beta} + \frac{1}{2}\,\mathrm{Ric}_{\alpha}{}^{\alpha} \wedge {}^{*}\mathrm{Ric}_{\beta}{}^{\beta} \\ &\equiv -L_{\mathrm{SKY}} \\ &\quad - 2\left(\mathrm{Ric}_{\alpha\beta} \wedge {}^{*}\mathrm{Ric}^{\alpha\beta} - \frac{1}{4}\mathrm{Ric}_{\alpha}{}^{\alpha} \wedge {}^{*}\mathrm{Ric}_{\beta}{}^{\beta}\right) \end{aligned}$$	$$\begin{aligned} L_{\text{Euler}} &:= (-1)^{\text{sig}+1}\mathrm{Tr}\{\Omega \wedge \Omega^{(\star)}\} = \frac{(-1)^{\text{sig}}}{2} R^{\alpha\beta} \wedge R^{(\star)}_{\alpha\beta} \\ &= dC_{\mathrm{RR}^{(\star)}} = \frac{(-1)^{\text{sig}}}{2} d\left(\Gamma_{\alpha\beta} \wedge R^{\alpha\beta(\star)} - \frac{1}{3}\Gamma_{\alpha}{}^{\beta(\star)} \wedge \Gamma_{\beta}{}^{\gamma} \wedge \Gamma_{\gamma}{}^{\alpha}\right) \\ &\equiv \frac{1}{2} R_{\alpha\beta} \wedge {}^{*}R^{\alpha\beta} - 2\mathrm{Ric}_{\alpha\beta} \wedge {}^{*}\mathrm{Ric}^{\alpha\beta} + \frac{1}{2}\mathrm{Ric}_{\alpha}{}^{\alpha} \wedge {}^{*}\mathrm{Ric}_{\beta}{}^{\beta} \\ &\equiv -L_{\mathrm{SKY}} \\ &\quad - 2\left(\mathrm{Ric}_{\alpha\beta} \wedge {}^{*}\mathrm{Ric}^{\alpha\beta} - \frac{1}{4}\mathrm{Ric}_{\alpha}{}^{\alpha} \wedge {}^{*}\mathrm{Ric}_{\beta}{}^{\beta}\right) \end{aligned}$$ (7
mielke-geometrodynamics_EQ0974 (14.2.15) **[conf 0.099]**	315	■ 0.099 ● N|+0	\Theta^{\perp}:=\pi(\hat{\Theta}-[\hat{\alpha}, \hat{ \vartheta}])=\left[\begin{array}{c|} \Theta \\ \hline 0 \end{array} \left\lvert\, \frac{\hat{\ell} \Omega^{ \prime}}{\circ \Theta}=0\right.\right],	$$\Theta^{\perp} := \pi(\hat{\Theta} - [\hat{\alpha}, \hat{\vartheta}]) = \left[\begin{array}{c\|} \Theta & \hat{\ell}\Omega' \\ \hline 0 & \overset{\circ}{\pi}\Theta = 0 \end{array}\right],$$	$$\Theta^{\perp} := \pi(\hat{\Theta} - [\hat{\alpha}, \hat{\vartheta}]) = \left[\begin{array}{c\|} \Theta & \hat{\ell}\Omega' \\ \hline 0 & \overset{\circ}{\pi}\Theta = 0 \end{array}\right],$$

Conf. MathPix confidence: ■ ≥0.9 ■ 0.5–0.9 ■ <0.5 — no value

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Residual render vs scan (inkdrill): ● C component ● W weak ● S stable ● N noise ● K clean ● not measured

[refined: *basis*] beside an identifier: the LaTeX-source and Rendered cells both show a VERIFIED refinement, not MathPix's own reading — *basis* names what verified it (e.g. ink, source). The original reading is unchanged in the model but is not the one drawn here.