0902.0431: residuals

equations measured 2026-09-11T09:58:26Z against the model of 2026-09-10

Corrected (10)

Identifier	Page	Conf.	LaTeX source	Rendered	Scan image
0902.0431_EQ0425 (was)	70	■ 0.082	`\begin{aligned} & A X A^{*} \times A Y A^{*}=A(X \times Y) A^{*} \\ & \left(P M A^{*}\right)^{*}\left(P N A^{*} \right)=A M^{*} P^{*} P N A=A\left(M^{*} N\right) A, \\ & \left(P M A^{*}\right)\left(A Y A^{*}\right)=P(M Y) A^{*}, \\ & \overline{P M A^{*} \times P N A^{*}}= \frac{\bar{t} \widetilde{P}(M \times N)^{t} \widetilde{A} *}{}=P \overline{M \times N} A^{*}, \text { etc. } \end{aligned}`	$AXA^* \times AYA^* = A(X\times Y)A^*$ $(PMA^*)^*(PNA^*) = AM^*P^*PNA = A(M^*N)A,$ $(PMA^*)(AYA^*) = P(MY)A^*,$ $\overline{PMA^*\times PNA^*} = \frac{\bar{t}\widetilde{P}(M\times N)^t\widetilde{A}*}{} = P\overline{M\times N}A^*, \text{ etc.}$	$AXA^* \times AYA^* = A(X\times Y)A^*,$ $(PMA^*)^*(PNA^*) = AM^*P^*PNA = A(M^*N)A,$ $(PMA^*)(AYA^*) = P(MY)A^*,$ $\overline{PMA^*\times PNA^*} = \overline{{}^t\widetilde{P}(M\times N)^t\widetilde{A}^*} = P\overline{M\times N}A^*,$ etc.
0902.0431_EQ0425 (now)	70	—	`\begin{aligned} & A X A^{*} \times A Y A^{*}=A(X \times Y) A^{*} \\ & \left(P M A^{*}\right)^{*}\left(P N A^{*} \right)=A M^{*} P^{*} P N A=A\left(M^{*} N\right) A, \\ & \left(P M A^{*}\right)\left(A Y A^{*}\right)=P(M Y) A^{*}, \\ & \overline{P M A^{*} \times P N A^{*}}= \bar{t} \widetilde{P}(M \times N)^{t} \widetilde{A}^{*}=P \overline{M \times N} A^{*}, \text{ etc. } \end{aligned}`	$AXA^* \times AYA^* = A(X\times Y)A^*$ $(PMA^*)^*(PNA^*) = AM^*P^*PNA = A(M^*N)A,$ $(PMA^*)(AYA^*) = P(MY)A^*,$ $\overline{PMA^*\times PNA^*} = \bar{t}\widetilde{P}(M\times N)^t\widetilde{A}^* = P\overline{M\times N}A^*, \text{ etc.}$	$AXA^* \times AYA^* = A(X\times Y)A^*,$ $(PMA^*)^*(PNA^*) = AM^*P^*PNA = A(M^*N)A,$ $(PMA^*)(AYA^*) = P(MY)A^*,$ $\overline{PMA^*\times PNA^*} = \overline{{}^t\widetilde{P}(M\times N)^t\widetilde{A}^*} = P\overline{M\times N}A^*,$ etc.
basis: inferred / ink					
0902.0431_EQ0425 (was)	70	■ 0.082	`\begin{aligned} & A X A^{*} \times A Y A^{*}=A(X \times Y) A^{*} \\ & \left(P M A^{*}\right)^{*}\left(P N A^{*} \right)=A M^{*} P^{*} P N A=A\left(M^{*} N\right) A, \\ & \left(P M A^{*}\right)\left(A Y A^{*}\right)=P(M Y) A^{*}, \\ & \overline{P M A^{*} \times P N A^{*}}= \frac{\bar{t} \widetilde{P}(M \times N)^{t} \widetilde{A} *}{}=P \overline{M \times N} A^{*}, \text { etc. } \end{aligned}`	$AXA^* \times AYA^* = A(X\times Y)A^*$ $(PMA^*)^*(PNA^*) = AM^*P^*PNA = A(M^*N)A,$ $(PMA^*)(AYA^*) = P(MY)A^*,$ $\overline{PMA^*\times PNA^*} = \frac{\bar{t}\widetilde{P}(M\times N)^t\widetilde{A}*}{} = P\overline{M\times N}A^*, \text{ etc.}$	$AXA^* \times AYA^* = A(X\times Y)A^*,$ $(PMA^*)^*(PNA^*) = AM^*P^*PNA = A(M^*N)A,$ $(PMA^*)(AYA^*) = P(MY)A^*,$ $\overline{PMA^*\times PNA^*} = \overline{{}^t\widetilde{P}(M\times N)^t\widetilde{A}^*} = P\overline{M\times N}A^*,$ etc.
0902.0431_EQ0425 (now)	70	—	`\begin{aligned} &=\nu\Big(\sum_{k=0}^{3} \lambda_k H_k\Big)\\ &=\frac{1}{2}\big( \lambda_0(-H_0+H_1-H_2+H_3)+\lambda_1(-H_0+H_1+H_2- \\ &\quad+\lambda_2(H_0+H_1+H_2+H_3)+ \lambda_3(-H_0-H_1+H_2+H_3) \end{aligned}`	$= \nu\Big(\sum_{k=0}^{3}\lambda_k H_k\Big)$ $= \frac{1}{2}\big(\lambda_0(-H_0+H_1-H_2+H_3)+\lambda_1(-H_0+H_1+H_2-$ $\quad + \lambda_2(H_0+H_1+H_2+H_3)+\lambda_3(-H_0-H_1+H_2+H_3)$	$AXA^* \times AYA^* = A(X\times Y)A^*,$ $(PMA^*)^*(PNA^*) = AM^*P^*PNA = A(M^*N)A,$ $(PMA^*)(AYA^*) = P(MY)A^*,$ $\overline{PMA^*\times PNA^*} = \overline{{}^t\widetilde{P}(M\times N)^t\widetilde{A}^*} = P\overline{M\times N}A^*,$ etc.
basis: inferred / ink					

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	Scan image
0902.0431_EQ0515 (was)	85	■ 0.002	`\begin{aligned} & \lambda_{0}-\lambda_{1}=1 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \\ & \lambda_{0}-\lambda_{2}=1 \quad 1 \quad 0 \quad 0 \quad 0 \quad \lambda_{0}+\lambda_{1}=1 \quad 2 \\ & \lambda_{0}-\lambda_{3}=1 \quad 1 \quad 1 \quad 0 \quad 2 \end{aligned} \quad \frac{1}{1} \text { = } \begin{array}{llllllll} 1 & 1 & 1 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 2 \\ \lambda_{1}-\lambda_{2} & =0 & 1 & 0 & 0 & 0 & 0 & 1 \end{array}`	$\begin{aligned} & \lambda_{0}-\lambda_{1}=1 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \\ & \lambda_{0}-\lambda_{2}=1 \quad 1 \quad 0 \quad 0 \quad 0 \quad \lambda_{0}+\lambda_{1}=1 \quad 2 \\ & \lambda_{0}-\lambda_{3}=1 \quad 1 \quad 1 \quad 0 \quad 2 \end{aligned} \quad \frac{1}{1} \text { = } \begin{array}{llllllll} 1 & 1 & 1 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 2 \\ \lambda_{1}-\lambda_{2} & =0 & 1 & 0 & 0 & 0 & 0 & 1 \end{array}$	$\begin{array}{lllllllllllllll} \lambda_0-\lambda_1 & = & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_1 & = & 1 & 2 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_2 & = & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_2 & = & 1 & 1 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_3 & = & 1 & 1 & 1 & 0 & 0 & 0 & \lambda_0+\lambda_3 & = & 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_1-\lambda_2 & = & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_1+\lambda_2 & = & 0 & 1 & 2 & 1 & 1 & 1 \\ \lambda_1-\lambda_3 & = & 0 & 1 & 1 & 0 & 0 & 0 & \lambda_1+\lambda_3 & = & 0 & 1 & 1 & 1 & 1 & 1 \\ \lambda_2-\lambda_3 & = & 0 & 0 & 1 & 0 & 0 & 0 & \lambda_2+\lambda_3 & = & 0 & 0 & 1 & 1 & 1 & 1 \end{array}$
0902.0431_EQ0515 (now)	85	—	`\begin{aligned} \lambda_0 - \lambda_1 &= 1\ 0\ 0\ 0\ 0\ 0 & \lambda_0 + \lambda_1 &= 1\ 2\ 2\ 1\ 1\ 1 \\ \lambda_0 - \lambda_2 &= 1\ 1\ 0\ 0\ 0\ 0 & \lambda_0 + \lambda_2 &= 1\ 1\ 2\ 1\ 1\ 1 \\ \lambda_0 - \lambda_3 &= 1\ 1\ 1\ 0\ 0\ 0 & \lambda_0 + \lambda_3 &= 1\ 1\ 1\ 1\ 1\ 1 \\ \lambda_1 - \lambda_2 &= 0\ 1\ 0\ 0\ 0\ 0 & \lambda_1 + \lambda_2 &= 0\ 1\ 2\ 1\ 1\ 1 \\ \lambda_1 - \lambda_3 &= 0\ 1\ 1\ 0\ 0\ 0 & \lambda_1 + \lambda_3 &= 0\ 1\ 1\ 1\ 1\ 1 \\ \lambda_2 - \lambda_3 &= 0\ 0\ 1\ 0\ 0\ 0 & \lambda_2 + \lambda_3 &= 0\ 0\ 1\ 1\ 1\ 1 \end{aligned}`	$\begin{aligned} \lambda_0 - \lambda_1 &= 1\ 0\ 0\ 0\ 0\ 0 & \lambda_0 + \lambda_1 &= 1\ 2\ 2\ 1\ 1\ 1 \\ \lambda_0 - \lambda_2 &= 1\ 1\ 0\ 0\ 0\ 0 & \lambda_0 + \lambda_2 &= 1\ 1\ 2\ 1\ 1\ 1 \\ \lambda_0 - \lambda_3 &= 1\ 1\ 1\ 0\ 0\ 0 & \lambda_0 + \lambda_3 &= 1\ 1\ 1\ 1\ 1\ 1 \\ \lambda_1 - \lambda_2 &= 0\ 1\ 0\ 0\ 0\ 0 & \lambda_1 + \lambda_2 &= 0\ 1\ 2\ 1\ 1\ 1 \\ \lambda_1 - \lambda_3 &= 0\ 1\ 1\ 0\ 0\ 0 & \lambda_1 + \lambda_3 &= 0\ 1\ 1\ 1\ 1\ 1 \\ \lambda_2 - \lambda_3 &= 0\ 0\ 1\ 0\ 0\ 0 & \lambda_2 + \lambda_3 &= 0\ 0\ 1\ 1\ 1\ 1 \end{aligned}$	$\begin{array}{lllllllllllllll} \lambda_0-\lambda_1 & = & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_1 & = & 1 & 2 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_2 & = & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_2 & = & 1 & 1 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_3 & = & 1 & 1 & 1 & 0 & 0 & 0 & \lambda_0+\lambda_3 & = & 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_1-\lambda_2 & = & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_1+\lambda_2 & = & 0 & 1 & 2 & 1 & 1 & 1 \\ \lambda_1-\lambda_3 & = & 0 & 1 & 1 & 0 & 0 & 0 & \lambda_1+\lambda_3 & = & 0 & 1 & 1 & 1 & 1 & 1 \\ \lambda_2-\lambda_3 & = & 0 & 0 & 1 & 0 & 0 & 0 & \lambda_2+\lambda_3 & = & 0 & 0 & 1 & 1 & 1 & 1 \end{array}$
basis: inferred / ink					
0902.0431_EQ0515 (was)	85	■ 0.002	`\begin{aligned} & \lambda_{0}-\lambda_{1}=1 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \\ & \lambda_{0}-\lambda_{2}=1 \quad 1 \quad 0 \quad 0 \quad 0 \quad \lambda_{0}+\lambda_{1}=1 \quad 2 \\ & \lambda_{0}-\lambda_{3}=1 \quad 1 \quad 1 \quad 0 \quad 2 \end{aligned} \quad \frac{1}{1} \text { = } \begin{array}{llllllll} 1 & 1 & 1 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 2 \\ \lambda_{1}-\lambda_{2} & =0 & 1 & 0 & 0 & 0 & 0 & 1 \end{array}`	$\begin{aligned} & \lambda_{0}-\lambda_{1}=1 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \\ & \lambda_{0}-\lambda_{2}=1 \quad 1 \quad 0 \quad 0 \quad 0 \quad \lambda_{0}+\lambda_{1}=1 \quad 2 \\ & \lambda_{0}-\lambda_{3}=1 \quad 1 \quad 1 \quad 0 \quad 2 \end{aligned} \quad \frac{1}{1} \text { = } \begin{array}{llllllll} 1 & 1 & 1 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 2 \\ \lambda_{1}-\lambda_{2} & =0 & 1 & 0 & 0 & 0 & 0 & 1 \end{array}$	$\begin{array}{lllllllllllllll} \lambda_0-\lambda_1 & = & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_1 & = & 1 & 2 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_2 & = & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_2 & = & 1 & 1 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_3 & = & 1 & 1 & 1 & 0 & 0 & 0 & \lambda_0+\lambda_3 & = & 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_1-\lambda_2 & = & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_1+\lambda_2 & = & 0 & 1 & 2 & 1 & 1 & 1 \\ \lambda_1-\lambda_3 & = & 0 & 1 & 1 & 0 & 0 & 0 & \lambda_1+\lambda_3 & = & 0 & 1 & 1 & 1 & 1 & 1 \\ \lambda_2-\lambda_3 & = & 0 & 0 & 1 & 0 & 0 & 0 & \lambda_2+\lambda_3 & = & 0 & 0 & 1 & 1 & 1 & 1 \end{array}$

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	Scan image
0902.0431_EQ0515 (now)	85	—	`\begin{aligned} \nu H &= \nu\bigg(\sum_{k=0}^{3} \lambda_k H_k\bigg) \\ &= \frac{1}{2}\big(\lambda_0(-H_0 + H_1 - H_2 + H_3) + \lambda_1(-H_0 + H_1 + H_2 - H_3) \\ &\quad + \lambda_2(H_0 + H_1 + H_2 + H_3) + \lambda_3(-H_0 - H_1 + H_2 + H_3)\big) \\ &= \frac{1}{2}(-\lambda_0 - \lambda_1 + \lambda_2 - \lambda_3)H_0 + \frac{1}{2}(\lambda_0 + \lambda_1 + \lambda_2 - \lambda_3)H_1 \end{aligned}`	$\begin{aligned} \nu H &= \nu\bigg(\sum_{k=0}^{3} \lambda_k H_k\bigg) \\ &= \frac{1}{2}\big(\lambda_0(-H_0 + H_1 - H_2 + H_3) + \lambda_1(-H_0 + H_1 + H_2 - H_3) \\ &\quad + \lambda_2(H_0 + H_1 + H_2 + H_3) + \lambda_3(-H_0 - H_1 + H_2 + H_3)\big) \\ &= \frac{1}{2}(-\lambda_0 - \lambda_1 + \lambda_2 - \lambda_3)H_0 + \frac{1}{2}(\lambda_0 + \lambda_1 + \lambda_2 - \lambda_3)H_1 \end{aligned}$	$\begin{array}{llllllllllllllll} \lambda_0-\lambda_1 &= 1 & 0 & 0 & 0 & 0 & 0 & & \lambda_0+\lambda_1 &= 1 & 2 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_2 &= 1 & 1 & 0 & 0 & 0 & 0 & & \lambda_0+\lambda_2 &= 1 & 1 & 2 & 1 & 1 & 1 \\ \lambda_0-\lambda_3 &= 1 & 1 & 1 & 0 & 0 & 0 & & \lambda_0+\lambda_3 &= 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_1-\lambda_2 &= 0 & 1 & 0 & 0 & 0 & 0 & & \lambda_1+\lambda_2 &= 0 & 1 & 2 & 1 & 1 & 1 \\ \lambda_1-\lambda_3 &= 0 & 1 & 1 & 0 & 0 & 0 & & \lambda_1+\lambda_3 &= 0 & 1 & 1 & 1 & 1 & 1 \\ \lambda_2-\lambda_3 &= 0 & 0 & 1 & 0 & 0 & 0 & & \lambda_2+\lambda_3 &= 0 & 0 & 1 & 1 & 1 & 1 \end{array}$
basis: inferred / ink					
0902.0431_EQ0756 (was)	125	■ 0.119	`\begin{array}{lllllllllllll} \lambda_{0}-\lambda_{1}=1 & 0 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{1}=1 & 2 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{2}=1 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{2}=1 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{3}=1 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{2}=0 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{2}=0 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{3}=0 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{3}=0 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{2}-\lambda_{3}=0 & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_{2}+\lambda_{3}=0 & 0 & 1 & 2 & 2 & 1 \\ & & \lambda_{0}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=1 & 1 & 1 & 1 & 1 & 1 & & & \\ & & \lambda_{1}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 1 & 1 & 1 & 1 & 1 & & & \\ & & \lambda_{2}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 1 & 1 & 1 & 1 & & & \\ & & +\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 0 & 1 & 1 & 1 & & & \end{array}`	$\begin{array}{lllllllllllll} \lambda_{0}-\lambda_{1}=1 & 0 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{1}=1 & 2 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{2}=1 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{2}=1 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{3}=1 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{2}=0 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{2}=0 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{3}=0 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{3}=0 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{2}-\lambda_{3}=0 & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_{2}+\lambda_{3}=0 & 0 & 1 & 2 & 2 & 1 \\ & & \lambda_{0}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=1 & 1 & 1 & 1 & 1 & 1 & & & \\ & & \lambda_{1}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 1 & 1 & 1 & 1 & 1 & & & \\ & & \lambda_{2}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 1 & 1 & 1 & 1 & & & \\ & & +\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 0 & 1 & 1 & 1 & & & \end{array}$	$\begin{array}{llllllllllllllllll} \lambda_0-\lambda_1=1 & 0 & 0 & 0 & 0 & 0 & 0 & & \lambda_0+\lambda_1=1 & 2 & 2 & 2 & 2 & 1 & 1 \\ \lambda_0-\lambda_2=1 & 1 & 0 & 0 & 0 & 0 & 0 & & \lambda_0+\lambda_2=1 & 1 & 2 & 2 & 2 & 1 & 1 \\ \lambda_0-\lambda_3=1 & 1 & 1 & 0 & 0 & 0 & 0 & & \lambda_0+\lambda_3=1 & 1 & 1 & 2 & 2 & 1 & 1 \\ \lambda_1-\lambda_2=0 & 1 & 0 & 0 & 0 & 0 & 0 & & \lambda_1+\lambda_2=0 & 1 & 2 & 2 & 2 & 1 & 1 \\ \lambda_1-\lambda_3=0 & 1 & 1 & 0 & 0 & 0 & 0 & & \lambda_1+\lambda_3=0 & 1 & 1 & 2 & 2 & 1 & 1 \\ \lambda_2-\lambda_3=0 & 0 & 1 & 0 & 0 & 0 & 0 & & \lambda_2+\lambda_3=0 & 0 & 1 & 2 & 2 & 1 & 1 \end{array}$ $\begin{array}{lllllll} \lambda_0+\frac{1}{2}(\mu_2-\mu_3)=1 & 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_1+\frac{1}{2}(\mu_2-\mu_3)=0 & 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_2+\frac{1}{2}(\mu_2-\mu_3)=0 & 0 & 1 & 1 & 1 & 1 & 1 \\ \lambda_3+\frac{1}{2}(\mu_2-\mu_3)=0 & 0 & 0 & 1 & 1 & 1 & 1 \end{array}$

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

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Identifier	Page	Conf.	LaTeX source	Rendered	Scan image
0902.0431_EQ0756 (now)	125	—	`\begin{array}{llllllllllllll} \lambda_{0}-\lambda_{1}=1 & 0 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{1}=1 & 2 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{2}=1 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{2}=1 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{3}=1 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{2}=0 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{2}=0 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{3}=0 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{3}=0 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{2}-\lambda_{3}=0 & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_{2}+\lambda_{3}=0 & 0 & 1 & 2 & 2 & 1 \\ & & \lambda_{0}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=1 & 1 & 1 & 1 & 1 & 1 & & & & \\ & & \lambda_{1}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 1 & 1 & 1 & 1 & 1 & & & & \\ & & \lambda_{2}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 1 & 1 & 1 & 1 & & & & \\ & & \lambda_{3}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 0 & 1 & 1 & 1 & & & & \end{array}`	$\begin{array}{llllllllllllll} \lambda_{0}-\lambda_{1}=1 & 0 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{1}=1 & 2 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{2}=1 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{2}=1 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{0}-\lambda_{3}=1 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{0}+\lambda_{3}=1 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{2}=0 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{2}=0 & 1 & 2 & 2 & 2 & 1 \\ \lambda_{1}-\lambda_{3}=0 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_{1}+\lambda_{3}=0 & 1 & 1 & 2 & 2 & 1 \\ \lambda_{2}-\lambda_{3}=0 & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_{2}+\lambda_{3}=0 & 0 & 1 & 2 & 2 & 1 \\ & & \lambda_{0}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=1 & 1 & 1 & 1 & 1 & 1 & & & & \\ & & \lambda_{1}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 1 & 1 & 1 & 1 & 1 & & & & \\ & & \lambda_{2}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 1 & 1 & 1 & 1 & & & & \\ & & \lambda_{3}+\frac{1}{2}\left(\mu_{2}-\mu_{3}\right)=0 & 0 & 0 & 1 & 1 & 1 & & & & \end{array}$	$\begin{array}{lllllllllllll} \lambda_0-\lambda_1=1 & 0 & 0 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_1=1 & 2 & 2 & 2 & 2 & 1 & 1 \\ \lambda_0-\lambda_2=1 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_2=1 & 1 & 2 & 2 & 2 & 1 & 1 \\ \lambda_0-\lambda_3=1 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_0+\lambda_3=1 & 1 & 1 & 2 & 2 & 1 & 1 \\ \lambda_1-\lambda_2=0 & 1 & 0 & 0 & 0 & 0 & 0 & \lambda_1+\lambda_2=0 & 1 & 2 & 2 & 2 & 1 & 1 \\ \lambda_1-\lambda_3=0 & 1 & 1 & 0 & 0 & 0 & 0 & \lambda_1+\lambda_3=0 & 1 & 1 & 2 & 2 & 1 & 1 \\ \lambda_2-\lambda_3=0 & 0 & 1 & 0 & 0 & 0 & 0 & \lambda_2+\lambda_3=0 & 0 & 1 & 2 & 2 & 1 & 1 \end{array}$ $\begin{array}{lllllll} \lambda_0+\frac{1}{2}(\mu_2-\mu_3)=1 & 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_1+\frac{1}{2}(\mu_2-\mu_3)=0 & 1 & 1 & 1 & 1 & 1 & 1 \\ \lambda_2+\frac{1}{2}(\mu_2-\mu_3)=0 & 0 & 1 & 1 & 1 & 1 & 1 \\ \lambda_3+\frac{1}{2}(\mu_2-\mu_3)=0 & 0 & 0 & 1 & 1 & 1 & 1 \end{array}$
basis: inferred / ink					

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[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	Scan image
0902.0431_EQ0922 (was)	153	■ 0.102	`f^{-1}\left(\sum_{i<j<k} x_{i j k} \boldsymbol{e}_{i} \wedge \boldsymbol{e}_{j} \wedge \boldsymbol{e}_{k} \right)=\left(\begin{array}{c} \left(\begin{array}{ccc} h\left(x_{156}\right) & h\left(x_{164}, \bar{x}_{256} \right) & h\left(x_{145}, \bar{x}_{356}\right) \\ h \left(x_{256}, \bar{x}_{164}\right) & h\left(x_{264} \right) & h\left(x_{245}, \bar{x}_{364}\right) \\ h \left(x_{356}, \bar{x}_{145}\right) & h\left(x_{364}, \bar{x}_{245}\right) & h\left(x_{345}\right) \end{array} \right) \\ \left(\begin{array}{ccc} h\left(x_{423}\right) & h\left(x_{431}, \bar{x}_{523}\right) & h\left(x_{412}, \bar{x}_{623}\right) \\ h\left(x_{523}, \bar{x}_{431} \right) & h\left(x_{531}\right) & h\left(x_{512}, \bar{x}_{631}\right) \\ h\left(x_{623}, \bar{x}_{412} \right) & h\left(x_{631}, \bar{x}_{512}\right) & h \left(x_{612}\right) \end{array}\right) \\ \\ \\ \left(\begin{array}{cc} h\left(x_{123}\right) & \\ h \left(x_{456}\right) \end{array}\right. \end{array} \right),`	$f^{-1}\left(\sum_{i<j<k} x_{i j k} \boldsymbol{e}_{i} \wedge \boldsymbol{e}_{j} \wedge \boldsymbol{e}_{k} \right)=\left(\begin{array}{c} \left(\begin{array}{ccc} h\left(x_{156}\right) & h\left(x_{164}, \bar{x}_{256} \right) & h\left(x_{145}, \bar{x}_{356}\right) \\ h \left(x_{256}, \bar{x}_{164}\right) & h\left(x_{264} \right) & h\left(x_{245}, \bar{x}_{364}\right) \\ h \left(x_{356}, \bar{x}_{145}\right) & h\left(x_{364}, \bar{x}_{245}\right) & h\left(x_{345}\right) \end{array} \right) \\ \left(\begin{array}{ccc} h\left(x_{423}\right) & h\left(x_{431}, \bar{x}_{523}\right) & h\left(x_{412}, \bar{x}_{623}\right) \\ h\left(x_{523}, \bar{x}_{431} \right) & h\left(x_{531}\right) & h\left(x_{512}, \bar{x}_{631}\right) \\ h\left(x_{623}, \bar{x}_{412} \right) & h\left(x_{631}, \bar{x}_{512}\right) & h \left(x_{612}\right) \end{array}\right) \\ \\ \\ \left(\begin{array}{cc} h\left(x_{123}\right) & \\ h \left(x_{456}\right) \end{array}\right. \end{array} \right),$	$f^{-1}\Big(\sum_{i<j<k} x_{ijk}\boldsymbol{e}_i\wedge\boldsymbol{e}_j\wedge\boldsymbol{e}_k\Big) = \left(\begin{array}{c} \left(\begin{array}{ccc} h(x_{156}) & h(x_{164},\overline{x}_{256}) & h(x_{145},\overline{x}_{356}) \\ h(x_{256},\overline{x}_{164}) & h(x_{264}) & h(x_{245},\overline{x}_{364}) \\ h(x_{356},\overline{x}_{145}) & h(x_{364},\overline{x}_{245}) & h(x_{345}) \end{array}\right) \\ \left(\begin{array}{ccc} h(x_{423}) & h(x_{431},\overline{x}_{523}) & h(x_{412},\overline{x}_{623}) \\ h(x_{523},\overline{x}_{431}) & h(x_{531}) & h(x_{512},\overline{x}_{631}) \\ h(x_{623},\overline{x}_{412}) & h(x_{631},\overline{x}_{512}) & h(x_{612}) \end{array}\right) \\ h(x_{123}) \\ h(x_{456}) \end{array}\right),$
0902.0431_EQ0922 (now)	153	—	`f^{-1}\left(\sum_{i<j<k} x_{ijk} \boldsymbol{e}_{i} \wedge \boldsymbol{e}_{j} \wedge \boldsymbol{e}_{k} \right)=\left(\begin{array}{c} \left(\begin{array}{ccc} h\left(x_{156}\right) & h\left(x_{164}, \bar{x}_{256} \right) & h\left(x_{145}, \bar{x}_{356}\right) \\ h \left(x_{256}, \bar{x}_{164}\right) & h\left(x_{264} \right) & h\left(x_{245}, \bar{x}_{364}\right) \\ h \left(x_{356}, \bar{x}_{145}\right) & h\left(x_{364}, \bar{x}_{245}\right) & h\left(x_{345}\right) \end{array} \right) \\ \left(\begin{array}{ccc} h\left(x_{423}\right) & h\left(x_{431}, \bar{x}_{523}\right) & h\left(x_{412}, \bar{x}_{623}\right) \\ h\left(x_{523}, \bar{x}_{431} \right) & h\left(x_{531}\right) & h\left(x_{512}, \bar{x}_{631}\right) \\ h\left(x_{623}, \bar{x}_{412} \right) & h\left(x_{631}, \bar{x}_{512}\right) & h \left(x_{612}\right) \end{array}\right) \\ \\ \\ \left(\begin{array}{cc} h\left(x_{123}\right) & \\ & h\left(x_{456}\right) \end{array}\right) \end{array} \right),`	$f^{-1}\left(\sum_{i<j<k} x_{ijk} \boldsymbol{e}_{i} \wedge \boldsymbol{e}_{j} \wedge \boldsymbol{e}_{k} \right)=\left(\begin{array}{c} \left(\begin{array}{ccc} h\left(x_{156}\right) & h\left(x_{164}, \bar{x}_{256} \right) & h\left(x_{145}, \bar{x}_{356}\right) \\ h \left(x_{256}, \bar{x}_{164}\right) & h\left(x_{264} \right) & h\left(x_{245}, \bar{x}_{364}\right) \\ h \left(x_{356}, \bar{x}_{145}\right) & h\left(x_{364}, \bar{x}_{245}\right) & h\left(x_{345}\right) \end{array} \right) \\ \left(\begin{array}{ccc} h\left(x_{423}\right) & h\left(x_{431}, \bar{x}_{523}\right) & h\left(x_{412}, \bar{x}_{623}\right) \\ h\left(x_{523}, \bar{x}_{431} \right) & h\left(x_{531}\right) & h\left(x_{512}, \bar{x}_{631}\right) \\ h\left(x_{623}, \bar{x}_{412} \right) & h\left(x_{631}, \bar{x}_{512}\right) & h \left(x_{612}\right) \end{array}\right) \\ \\ \\ \left(\begin{array}{cc} h\left(x_{123}\right) & \\ & h\left(x_{456}\right) \end{array}\right) \end{array} \right),$	$f^{-1}\Big(\sum_{i<j<k} x_{ijk}\boldsymbol{e}_i\wedge\boldsymbol{e}_j\wedge\boldsymbol{e}_k\Big) = \left(\begin{array}{c} \left(\begin{array}{ccc} h(x_{156}) & h(x_{164},\overline{x}_{256}) & h(x_{145},\overline{x}_{356}) \\ h(x_{256},\overline{x}_{164}) & h(x_{264}) & h(x_{245},\overline{x}_{364}) \\ h(x_{356},\overline{x}_{145}) & h(x_{364},\overline{x}_{245}) & h(x_{345}) \end{array}\right) \\ \left(\begin{array}{ccc} h(x_{423}) & h(x_{431},\overline{x}_{523}) & h(x_{412},\overline{x}_{623}) \\ h(x_{523},\overline{x}_{431}) & h(x_{531}) & h(x_{512},\overline{x}_{631}) \\ h(x_{623},\overline{x}_{412}) & h(x_{631},\overline{x}_{512}) & h(x_{612}) \end{array}\right) \\ h(x_{123}) \\ h(x_{456}) \end{array}\right),$

basis: inferred / ink

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	Scan image
0902.0431_EQ1032 (was)	173	■ 0.022	`\begin{aligned} & \frac{1}{2}\left(\lambda_{0}+\lambda_{1}+\lambda_{2}-\lambda_{3}\right)+\frac{1}{2}\mu_{2}-\frac{2}{3} \nu=1 \quad 2 \quad 3 \quad 3 \quad 2 \quad 2 \end{aligned} \quad 1 \quad =\frac{1}{2}\left(\lambda_{0}+\lambda_{1}-\lambda_{2}+\lambda_{3}\right)+\frac{1}{2} \mu_{2}-\frac{2}{3} \nu=1 \quad 2 \quad 3 \quad 3 \quad 2 \quad 1 \quad 1 \quad 1 .`	*(not rendered)*	$\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2-\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 3 \quad 2 \quad 2 \quad 1 \quad 1$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2+\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 3 \quad 2 \quad 1 \quad 1 \quad 1$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2+\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 3 \quad 2 \quad 1 \quad 0 \quad 1$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2-\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu=1 \quad 1 \quad 1 \quad 1 \quad 0 \quad 0 \quad 0 \quad 0$ $\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2-\lambda_3)-\frac{1}{2}\mu_2+\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 2 \quad 2 \quad 2 \quad 1 \quad 2$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2+\lambda_3)-\frac{1}{2}\mu_2+\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 2 \quad 2 \quad 1 \quad 1 \quad 2$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2+\lambda_3)-\frac{1}{2}\mu_2-\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 2 \quad 2 \quad 1 \quad 0 \quad 2$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2-\lambda_3)-\frac{1}{2}\mu_2+\frac{2}{3}\nu=1 \quad 1 \quad 1 \quad 0 \quad 0 \quad 0 \quad 0 \quad 1$ $\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2+\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 3 \quad 3 \quad 2 \quad 1 \quad 1$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2-\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu=1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2-\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu=1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0 \quad 0$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2+\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu=1 \quad 1 \quad 1 \quad 1 \quad 1 \quad 0 \quad 0 \quad 0$ $\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2+\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu=1 \quad 3 \quad 5 \quad 4 \quad 3 \quad 2 \quad 1 \quad 3$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2-\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 2 \quad 1 \quad 1 \quad 1 \quad 2$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2-\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 2 \quad 1 \quad 1 \quad 0 \quad 2$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2+\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu=1 \quad 2 \quad 3 \quad 2 \quad 1 \quad 0 \quad 0 \quad 2$

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	Scan image
0902.0431_EQ1032 (now)	173	—	`\begin{aligned} \kappa\pi H &= \tfrac{1}{2}(-\lambda_0+\lambda_1-\lambda_2+\lambda_3)H_0 + \tfrac{1}{2}(-\lambda_0+\lambda_1+\lambda_2-\lambda_3)H_1 \\ & \quad +\tfrac{1}{2}(\lambda_0+\lambda_1+\lambda_2+\lambda_3)H_2 + \tfrac{1}{2}(-\lambda_0-\lambda_1+\lambda_2+\lambda_3)H_3, \end{aligned}`	$\kappa\pi H = \tfrac{1}{2}(-\lambda_0+\lambda_1-\lambda_2+\lambda_3)H_0 + \tfrac{1}{2}(-\lambda_0+\lambda_1+\lambda_2-\lambda_3)H_1$ $\quad + \tfrac{1}{2}(\lambda_0+\lambda_1+\lambda_2+\lambda_3)H_2 + \tfrac{1}{2}(-\lambda_0-\lambda_1+\lambda_2+\lambda_3)H_3,$	$\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2-\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 3\ \ 2\ \ 2\ \ 1\ \ 1$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2+\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 3\ \ 2\ \ 1\ \ 1\ \ 1$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2+\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 3\ \ 2\ \ 1\ \ 0\ \ 1$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2-\lambda_3)+\frac{1}{2}\mu_2-\frac{2}{3}\nu = 1\ \ 1\ \ 1\ \ 1\ \ 0\ \ 0\ \ 0\ \ 0$ $\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2-\lambda_3)-\frac{1}{2}\mu_2+\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 2\ \ 2\ \ 2\ \ 1\ \ 2$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2+\lambda_3)-\frac{1}{2}\mu_2+\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 2\ \ 2\ \ 1\ \ 1\ \ 2$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2+\lambda_3)-\frac{1}{2}\mu_2-\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 2\ \ 2\ \ 1\ \ 0\ \ 2$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2-\lambda_3)-\frac{1}{2}\mu_2+\frac{2}{3}\nu = 1\ \ 1\ \ 1\ \ 0\ \ 0\ \ 0\ \ 0\ \ 1$ $\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2+\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 3\ \ 3\ \ 2\ \ 1\ \ 1$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2-\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu = 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2-\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu = 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0\ \ 0$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2+\lambda_3)+\frac{1}{2}\mu_3-\frac{2}{3}\nu = 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0\ \ 0\ \ 0$ $\frac{1}{2}(\lambda_0+\lambda_1+\lambda_2+\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu = 1\ \ 3\ \ 5\ \ 4\ \ 3\ \ 2\ \ 1\ \ 3$ $\frac{1}{2}(\lambda_0+\lambda_1-\lambda_2-\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 2\ \ 1\ \ 1\ \ 1\ \ 2$ $\frac{1}{2}(\lambda_0-\lambda_1+\lambda_2-\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 2\ \ 1\ \ 1\ \ 0\ \ 2$ $\frac{1}{2}(\lambda_0-\lambda_1-\lambda_2+\lambda_3)-\frac{1}{2}\mu_3+\frac{2}{3}\nu = 1\ \ 2\ \ 3\ \ 2\ \ 1\ \ 0\ \ 0\ \ 2$
basis: inferred / ink					
0902.0431_EQ1059 (was)	180	■ 0.093	`\begin{aligned} & =\left\{\alpha \in\left(E_{8}{ }^{C}\right)_{1,1-, 1-} \mid \tau \widetilde{\lambda} \alpha=\alpha \tau \widetilde{\lambda}\right\} \\ & =\left\{\alpha \in E_{7}{ }^{C} \mid \tau \widetilde{\lambda} \alpha=\alpha \tau \widetilde{\lambda}\right\} \text { (Proposition 5.7.1) } \\ & =\left\{\alpha \in E_{7}{ }^{C} \mid \tau \lambda \alpha=\alpha \tau \lambda\right\} \text { (by the correspondence to Proposition 5.7.1) } \\ & =E_{7} \text { (Lemma 4.3.3.(4)). } \end{aligned}`	$=\left\{\alpha \in\left(E_{8}{ }^{C}\right)_{1,1-, 1-} \mid \tau \widetilde{\lambda} \alpha=\alpha \tau \widetilde{\lambda}\right\}$ $=\left\{\alpha \in E_{7}{ }^{C} \mid \tau \widetilde{\lambda} \alpha=\alpha \tau \widetilde{\lambda}\right\}$ (Proposition 5.7.1) $=\left\{\alpha \in E_{7}{ }^{C} \mid \tau \lambda \alpha=\alpha \tau \lambda\right\}$ (by the correspondence to Proposition 5.7.1) $=E_{7}$ (Lemma 4.3.3.(4)).	$=\{\alpha \in ({E_8}^C)_{1,1-,1-} \mid \tau\widetilde{\lambda}\alpha = \alpha\tau\widetilde{\lambda}\}$ $=\{\alpha \in {E_7}^C \mid \tau\widetilde{\lambda}\alpha = \alpha\tau\widetilde{\lambda}\}$ (Proposition 5.7.1) $=\{\alpha \in {E_7}^C \mid \tau\lambda\alpha = \alpha\tau\lambda\}$ (by the correspondence to Proposition 5.7.1) $= E_7$ (Lemma 4.3.3.(4)).

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	Scan image
0902.0431_EQ1059 (now)	180	—	`\begin{aligned} \kappa\pi H ={}& \frac{1}{2}(-\lambda_0 + \lambda_1 - \lambda_2 + \lambda_3)H_0 + \frac{1}{2}(-\lambda_0 + \lambda_1 + \lambda_2 - \lambda_3)H_1 \\ & + \frac{1}{2}(\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3)H_2 + \frac{1}{2}(-\lambda_0 - \lambda_1 + \lambda_2 + \lambda_3)H_3, \end{aligned}`	$\kappa\pi H = \frac{1}{2}(-\lambda_0 + \lambda_1 - \lambda_2 + \lambda_3)H_0 + \frac{1}{2}(-\lambda_0 + \lambda_1 + \lambda_2 - \lambda_3)H_1 + \frac{1}{2}(\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3)H_2 + \frac{1}{2}(-\lambda_0 - \lambda_1 + \lambda_2 + \lambda_3)H_3,$	$= \{\alpha \in ({E_8}^C)_{1,1^-,1_-} \mid \tau\widetilde{\lambda}\alpha = \alpha\tau\widetilde{\lambda}\}$ $= \{\alpha \in {E_7}^C \mid \tau\widetilde{\lambda}\alpha = \alpha\tau\widetilde{\lambda}\}$ (Proposition 5.7.1) $= \{\alpha \in {E_7}^C \mid \tau\lambda\alpha = \alpha\tau\lambda\}$ (by the correspondence to Proposition 5.7.1) $= E_7$ (Lemma 4.3.3.(4)).
basis: inferred / ink					
0902.0431_EQ1117 (was)	189	0.108	`\begin{aligned} & (\boldsymbol{X}, \boldsymbol{Y})= \left(X_{1}, Y_{1}\right)+\left(X_{2}, Y_{2}\right)+ \left(X_{3}, Y_{3}\right) \in C, \\ & \langle \boldsymbol{X}, \boldsymbol{Y}\rangle=\left\langle X_{1}, Y_{1}\right\rangle+\left\langle X_{2}, Y_{2} \right\rangle+\left\langle X_{3}, Y_{3}\right\rangle \in C, \\ & \boldsymbol{X} \times \boldsymbol{Y}=\left(\begin{array}{ll} X_{2} \times Y_{3}-Y_{2} \times X_{3} \\ X_{3} \times Y_{1}-Y_{3} \times X_{1} \\ X_{1} \times Y_{2}-Y_{1} \times X_{2} \end{array}\right) \in\left(\mathfrak{J}^{C}\right)^{3}, \\ & \boldsymbol{X} \cdot \boldsymbol{Y}=\left(\begin{array}{ll} \left(X_{1}, Y_{1} \right) & \left(X_{1}, Y_{2}\right) \\ \left(X_{2}, Y_{1} \right) & \left(X_{2}, Y_{2}\right) \\ \left(X_{3}, Y_{1}\right) & \left(X_{2}, Y_{3}\right) \\ X \vee \boldsymbol{Y} & \left(X_{3}, Y_{3}\right) \end{array}\right)-\frac{1}{3}(\boldsymbol{X}, \boldsymbol{Y}) E \in \mathfrak{s} \mathfrak{l}(3, C), \\ & \boldsymbol{X} Y_{1}+X_{2} \vee Y_{2}+X_{3} \vee Y_{3} \in \mathfrak{e}_{6}{ }^{C}, \end{aligned}`	$(\boldsymbol{X}, \boldsymbol{Y})= (X_{1}, Y_{1})+(X_{2}, Y_{2})+(X_{3}, Y_{3}) \in C,$ $\langle \boldsymbol{X}, \boldsymbol{Y}\rangle=\langle X_{1}, Y_{1}\rangle+\langle X_{2}, Y_{2}\rangle+\langle X_{3}, Y_{3}\rangle \in C,$ $\boldsymbol{X} \times \boldsymbol{Y}=\left(\begin{array}{ll} X_{2} \times Y_{3}-Y_{2} \times X_{3} \\ X_{3} \times Y_{1}-Y_{3} \times X_{1} \\ X_{1} \times Y_{2}-Y_{1} \times X_{2} \end{array}\right) \in\left(\mathfrak{J}^{C}\right)^{3},$ $\boldsymbol{X} \cdot \boldsymbol{Y}=\left(\begin{array}{ll} (X_{1}, Y_{1}) & (X_{1}, Y_{2}) \\ (X_{2}, Y_{1}) & (X_{2}, Y_{2}) \\ (X_{3}, Y_{1}) & (X_{2}, Y_{3}) \\ X \vee \boldsymbol{Y} & (X_{3}, Y_{3}) \end{array}\right)-\frac{1}{3}(\boldsymbol{X}, \boldsymbol{Y}) E \in \mathfrak{sl}(3, C),$ $\boldsymbol{X} Y_{1}+X_{2} \vee Y_{2}+X_{3} \vee Y_{3} \in {\mathfrak{e}_{6}}^{C},$	$(\boldsymbol{X}, \boldsymbol{Y}) = (X_1, Y_1) + (X_2, Y_2) + (X_3, Y_3) \in C,$ $\langle \boldsymbol{X}, \boldsymbol{Y}\rangle = \langle X_1, Y_1\rangle + \langle X_2, Y_2\rangle + \langle X_3, Y_3\rangle \in C,$ $\boldsymbol{X} \times \boldsymbol{Y} = \begin{pmatrix} X_2 \times Y_3 - Y_2 \times X_3 \\ X_3 \times Y_1 - Y_3 \times X_1 \\ X_1 \times Y_2 - Y_1 \times X_2 \end{pmatrix} \in (\mathfrak{J}^C)^3,$ $\boldsymbol{X} \cdot \boldsymbol{Y} = \begin{pmatrix} (X_1, Y_1) & (X_1, Y_2) & (X_1, Y_3) \\ (X_2, Y_1) & (X_2, Y_2) & (X_2, Y_3) \\ (X_3, Y_1) & (X_3, Y_2) & (X_3, Y_3) \end{pmatrix} - \frac{1}{3}(\boldsymbol{X}, \boldsymbol{Y})E \in \mathfrak{sl}(3, C),$ $\boldsymbol{X} \vee \boldsymbol{Y} = X_1 \vee Y_1 + X_2 \vee Y_2 + X_3 \vee Y_3 \in {\mathfrak{e}_6}^C,$

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	Scan image
0902.0431_EQ1117 (now)	189	—	`\begin{aligned} & (\boldsymbol{X}, \boldsymbol{Y})= \left(X_{1}, Y_{1}\right)+\left(X_{2}, Y_{2}\right)+ \left(X_{3}, Y_{3}\right) \in C, \\ & \langle \boldsymbol{X}, \boldsymbol{Y}\rangle=\left\langle X_{1}, Y_{1}\right\rangle+\left\langle X_{2}, Y_{2} \right\rangle+\left\langle X_{3}, Y_{3}\right\rangle \in C, \\ & \boldsymbol{X} \wedge \boldsymbol{Y}=\left(\begin{array}{l} X_{2} \wedge Y_{3}-Y_{2} \wedge X_{3} \\ X_{3} \wedge Y_{1}-Y_{3} \wedge X_{1} \\ X_{1} \wedge Y_{2}-Y_{1} \wedge X_{2} \end{array}\right) \in\left(\mathfrak{J}^{C}\right)^{3}, \\ & \boldsymbol{X} \cdot \boldsymbol{Y}=\left(\begin{array}{ccc} \left(X_{1}, Y_{1}\right) & \left(X_{1}, Y_{2}\right) & \left(X_{1}, Y_{3}\right) \\ \left(X_{2}, Y_{1} \right) & \left(X_{2}, Y_{2}\right) & \left(X_{2}, Y_{3} \right) \\ \left(X_{3}, Y_{1}\right) & \left(X_{3}, Y_{2}\right) & \left(X_{3}, Y_{3}\right) \end{array} \right)-\frac{1}{3}(\boldsymbol{X}, \boldsymbol{Y}) E \in \mathfrak{sl}(3, C), \\ & \boldsymbol{X} \vee \boldsymbol{Y}=X_{1} \vee Y_{1}+X_{2} \vee Y_{2}+X_{3} \vee Y_{3} \in \mathfrak{e}_{6}{ }^{C}, \end{aligned}`	$(\boldsymbol{X}, \boldsymbol{Y})= \left(X_{1}, Y_{1}\right)+\left(X_{2}, Y_{2}\right)+ \left(X_{3}, Y_{3}\right) \in C,$ $\langle \boldsymbol{X}, \boldsymbol{Y}\rangle=\left\langle X_{1}, Y_{1}\right\rangle+\left\langle X_{2}, Y_{2} \right\rangle+\left\langle X_{3}, Y_{3}\right\rangle \in C,$ $\boldsymbol{X} \wedge \boldsymbol{Y}=\left(\begin{array}{l} X_{2} \wedge Y_{3}-Y_{2} \wedge X_{3} \\ X_{3} \wedge Y_{1}-Y_{3} \wedge X_{1} \\ X_{1} \wedge Y_{2}-Y_{1} \wedge X_{2} \end{array}\right) \in\left(\mathfrak{J}^{C}\right)^{3},$ $\boldsymbol{X} \cdot \boldsymbol{Y}=\left(\begin{array}{ccc} \left(X_{1}, Y_{1}\right) & \left(X_{1}, Y_{2}\right) & \left(X_{1}, Y_{3}\right) \\ \left(X_{2}, Y_{1} \right) & \left(X_{2}, Y_{2}\right) & \left(X_{2}, Y_{3} \right) \\ \left(X_{3}, Y_{1}\right) & \left(X_{3}, Y_{2}\right) & \left(X_{3}, Y_{3}\right) \end{array} \right)-\frac{1}{3}(\boldsymbol{X}, \boldsymbol{Y}) E \in \mathfrak{sl}(3, C),$ $\boldsymbol{X} \vee \boldsymbol{Y}=X_{1} \vee Y_{1}+X_{2} \vee Y_{2}+X_{3} \vee Y_{3} \in \mathfrak{e}_{6}{ }^{C},$	$(\boldsymbol{X}, \boldsymbol{Y}) = (X_1, Y_1) + (X_2, Y_2) + (X_3, Y_3) \in C,$ $\langle \boldsymbol{X}, \boldsymbol{Y}\rangle = \langle X_1, Y_1\rangle + \langle X_2, Y_2\rangle + \langle X_3, Y_3\rangle \in C,$ $\boldsymbol{X} \times \boldsymbol{Y} = \begin{pmatrix} X_2 \times Y_3 - Y_2 \times X_3 \\ X_3 \times Y_1 - Y_3 \times X_1 \\ X_1 \times Y_2 - Y_1 \times X_2 \end{pmatrix} \in (\mathfrak{J}^C)^3,$ $\boldsymbol{X} \cdot \boldsymbol{Y} = \begin{pmatrix} (X_1, Y_1) & (X_1, Y_2) & (X_1, Y_3) \\ (X_2, Y_1) & (X_2, Y_2) & (X_2, Y_3) \\ (X_3, Y_1) & (X_3, Y_2) & (X_3, Y_3) \end{pmatrix} - \frac{1}{3}(\boldsymbol{X}, \boldsymbol{Y})E \in \mathfrak{sl}(3, C),$ $\boldsymbol{X} \vee \boldsymbol{Y} = X_1 \vee Y_1 + X_2 \vee Y_2 + X_3 \vee Y_3 \in \mathfrak{e}_6{}^C,$

basis: inferred / ink

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.