PSALTer results panel

$$\mathcal{S} == \int\int\int\int \Big(\frac{1}{6}\,(-4\,t_{.3}\,\mathcal{A}^{\alpha\iota}{}_{\alpha}\,\mathcal{A}_{\iota}{}^{\theta}{}_{\theta} + 6\,\mathcal{A}^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} + 6\,f^{\alpha\beta}\,\tau(\Delta+\mathcal{K})_{\alpha\beta} + 8\,t_{.3}\,\mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\,\partial_{\iota}f^{\alpha\iota} - 3\,r_{.3}\,\partial_{\beta}\mathcal{A}_{\iota}{}^{\theta}{}_{\theta}\partial^{\iota}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 3\,r_{.3}\,\partial_{\iota}\mathcal{A}_{\beta}{}^{\theta}{}_{\theta}\partial^{\iota}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 8\,t_{.3}\,\mathcal{A}_{\iota}{}^{\theta}{}_{\theta}\,\partial^{\iota}f^{\alpha}{}_{\alpha} + 4\,t_{.3}\,\partial_{\iota}f^{\theta}{}_{\theta}\partial^{\iota}f^{\alpha}{}_{\alpha} - 3\,r_{.3}\,\partial_{\alpha}\mathcal{A}^{\alpha\beta\iota}\partial_{\theta}\mathcal{A}_{\beta}{}^{\theta}{}_{\iota} + 6\,r_{.3}\,\partial^{\iota}\mathcal{A}^{\alpha\beta}{}_{\alpha}\partial_{\theta}\mathcal{A}_{\beta}{}^{\theta}{}_{\iota} - 3\,r_{.3}\,\partial_{\alpha}\mathcal{A}^{\alpha\beta\iota}\partial_{\theta}\mathcal{A}_{\iota}{}^{\theta}{}_{\beta} + 6\,r_{.3}\,\partial^{\iota}\mathcal{A}^{\alpha\beta}{}_{\alpha}\partial_{\theta}\mathcal{A}_{\iota}{}^{\theta}{}_{\beta} + 4\,t_{.3}\,\partial_{\iota}f^{\alpha\iota}\partial_{\theta}f_{\alpha}{}^{\theta} - 8\,t_{.3}\,\partial^{\iota}f^{\alpha}{}_{\alpha}\partial_{\theta}f_{\iota}{}^{\theta} - 24\,r_{.3}\,\partial_{\beta}\mathcal{A}_{\iota\theta\alpha}\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 6\,r_{.5}\,\partial_{\iota}\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha} - 6\,r_{.5}\,\partial_{\theta}\mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa}\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha} + 4\,t_{.2}\,\mathcal{A}_{\iota\theta\alpha}\,\partial^{\theta}f^{\alpha\iota} + 2\,t_{.2}\,\partial_{\alpha}f_{\iota\theta}\partial^{\theta}f^{\alpha\iota} - t_{.2}\,\partial_{\alpha}f_{\theta\iota}\partial^{\theta}f^{\alpha\iota} - t_{.2}\,\partial_{\iota}f_{\alpha\theta}\partial^{\theta}f^{\alpha\iota} + t_{.2}\,\partial_{\theta}f_{\alpha\iota}\partial^{\theta}f^{\alpha\iota} - t_{.2}\,\partial_{\theta}f_{\iota\alpha}\partial^{\theta}f^{\alpha\iota} - 4\,t_{.2}\,\mathcal{A}_{\alpha\theta\iota}\,(\mathcal{A}^{\alpha\iota\theta} + \partial^{\theta}f^{\alpha\iota}) + 2\,t_{.2}\,\mathcal{A}_{\alpha\iota\theta}\,(\mathcal{A}^{\alpha\iota\theta} + 2\,\partial^{\theta}f^{\alpha\iota}) - 6\,r_{.5}\,\partial_{\alpha}\mathcal{A}^{\alpha\iota\theta}\partial_{\kappa}\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta} + 12\,r_{.5}\,\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha}\partial_{\kappa}\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta} + 6\,r_{.5}\,\partial_{\alpha}\mathcal{A}^{\alpha\iota\theta}\partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota} - 12\,r_{.5}\,\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha}\partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota}\Big)[t, x, y, z]\,dz\,dy\,dx\,dt$$

Wave operator

	$0^+_{.}\mathcal{A}^{\parallel}$	$0^+_{.}f^{\parallel}$	$0^+_{.}f^{\perp}$	$0^-_{.}\mathcal{A}^{\parallel}$
$0^+_{.}\mathcal{A}^{\parallel}\,\dagger$	$t_{.3}$	$-i\sqrt{2}\,k\,t_{.3}$	0	0
$0^+_{.}f^{\parallel}\,\dagger$	$i\sqrt{2}\,k\,t_{.3}$	$2k^2\,t_{.3}$	0	0
$0^+_{.}f^{\perp}\,\dagger$	0	0	0	0
$0^-_{.}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	$t_{.2}$

	$1^+_{.}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_{.}\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_{.}f^{\parallel}{}_{\alpha\beta}$	$1^-_{.}\mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_{.}\mathcal{A}^{\perp}{}_{\alpha}$	$1^-_{.}f^{\parallel}{}_{\alpha}$	$1^-_{.}f^{\perp}{}_{\alpha}$
$1^+_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$k^2\,(2\,r_{.3} + r_{.5}) + \frac{2\,t_{.2}}{3}$	$\frac{\sqrt{2}\,t_{.2}}{3}$	$\frac{1}{3}\,i\sqrt{2}\,k\,t_{.2}$	0	0	0	0
$1^+_{.}\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	$\frac{\sqrt{2}\,t_{.2}}{3}$	$\frac{t_{.2}}{3}$	$\frac{i\,k\,t_{.2}}{3}$	0	0	0	0
$1^+_{.}f^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{1}{3}\,i\sqrt{2}\,k\,t_{.2}$	$-\frac{1}{3}\,i\,k\,t_{.2}$	$\frac{k^2\,t_{.2}}{3}$	0	0	0	0
$1^-_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$k^2\,(\frac{r_{.3}}{2} + r_{.5}) + \frac{2\,t_{.3}}{3}$	$-\frac{\sqrt{2}\,t_{.3}}{3}$	0	$-\frac{2}{3}\,i\,k\,t_{.3}$
$1^-_{.}\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{\sqrt{2}\,t_{.3}}{3}$	$\frac{t_{.3}}{3}$	0	$\frac{1}{3}\,i\sqrt{2}\,k\,t_{.3}$
$1^-_{.}f^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_{.}f^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{2\,i\,k\,t_{.3}}{3}$	$-\frac{1}{3}\,i\sqrt{2}\,k\,t_{.3}$	0	$\frac{2\,k^2\,t_{.3}}{3}$

	$2^+_{.}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_{.}f^{\parallel}{}_{\alpha\beta}$	$2^-_{.}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{3\,k^2\,r_{.3}}{2}$	0	0
$2^+_{.}f^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^-_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	0

Saturated propagator

	$0^+_{.}\sigma^{\parallel}$	$0^+_{.}\tau^{\parallel}$	$0^+_{.}\tau^{\perp}$	$0^-_{.}\sigma^{\parallel}$
$0^+_{.}\sigma^{\parallel}\,\dagger$	$\frac{1}{(1+2\,k^2)^2\,t_{.3}}$	$-\frac{i\sqrt{2}\,k}{(1+2\,k^2)^2\,t_{.3}}$	0	0
$0^+_{.}\tau^{\parallel}\,\dagger$	$\frac{i\sqrt{2}\,k}{(1+2\,k^2)^2\,t_{.3}}$	$\frac{2\,k^2}{(1+2\,k^2)^2\,t_{.3}}$	0	0
$0^+_{.}\tau^{\perp}\,\dagger$	0	0	0	0
$0^-_{.}\sigma^{\parallel}\,\dagger$	0	0	0	$\frac{1}{t_{.2}}$

	$1^+_{.}\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_{.}\sigma^{\perp}{}_{\alpha\beta}$	$1^+_{.}\tau^{\parallel}{}_{\alpha\beta}$	$1^-_{.}\sigma^{\parallel}{}_{\alpha}$	$1^-_{.}\sigma^{\perp}{}_{\alpha}$	$1^-_{.}\tau^{\parallel}{}_{\alpha}$	$1^-_{.}\tau^{\perp}{}_{\alpha}$
$1^+_{.}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{1}{k^2\,(2\,r_{.3}+r_{.5})}$	$-\frac{\sqrt{2}}{k^2\,(1+k^2)\,(2\,r_{.3}+r_{.5})}$	$-\frac{i\sqrt{2}}{k\,(1+k^2)\,(2\,r_{.3}+r_{.5})}$	0	0	0	0
$1^+_{.}\sigma^{\perp}\,\dagger^{\alpha\beta}$	$-\frac{\sqrt{2}}{k^2\,(1+k^2)\,(2\,r_{.3}+r_{.5})}$	$\frac{3\,k^2\,(2\,r_{.3}+r_{.5})+2\,t_{.2}}{(k+k^3)^2\,(2\,r_{.3}+r_{.5})\,t_{.2}}$	$\frac{i\,(3\,k^2\,(2\,r_{.3}+r_{.5})+2\,t_{.2})}{k\,(1+k^2)^2\,(2\,r_{.3}+r_{.5})\,t_{.2}}$	0	0	0	0
$1^+_{.}\tau^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{i\sqrt{2}}{k\,(1+k^2)\,(2\,r_{.3}+r_{.5})}$	$-\frac{i\,(3\,k^2\,(2\,r_{.3}+r_{.5})+2\,t_{.2})}{k\,(1+k^2)^2\,(2\,r_{.3}+r_{.5})\,t_{.2}}$	$\frac{3\,k^2\,(2\,r_{.3}+r_{.5})+2\,t_{.2}}{(1+k^2)^2\,(2\,r_{.3}+r_{.5})\,t_{.2}}$	0	0	0	0
$1^-_{.}\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{2}{k^2\,(r_{.3}+2\,r_{.5})}$	$\frac{2\sqrt{2}}{k^2\,(1+2\,k^2)\,(r_{.3}+2\,r_{.5})}$	0	$\frac{4\,i}{k\,(1+2\,k^2)\,(r_{.3}+2\,r_{.5})}$
$1^-_{.}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{2\sqrt{2}}{k^2\,(1+2\,k^2)\,(r_{.3}+2\,r_{.5})}$	$\frac{3\,k^2\,(r_{.3}+2\,r_{.5})+4\,t_{.3}}{(k+2\,k^3)^2\,(r_{.3}+2\,r_{.5})\,t_{.3}}$	0	$\frac{i\sqrt{2}\,(3\,k^2\,(r_{.3}+2\,r_{.5})+4\,t_{.3})}{k\,(1+2\,k^2)^2\,(r_{.3}+2\,r_{.5})\,t_{.3}}$
$1^-_{.}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_{.}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{4\,i}{k\,(1+2\,k^2)\,(r_{.3}+2\,r_{.5})}$	$-\frac{i\sqrt{2}\,(3\,k^2\,(r_{.3}+2\,r_{.5})+4\,t_{.3})}{k\,(1+2\,k^2)^2\,(r_{.3}+2\,r_{.5})\,t_{.3}}$	0	$\frac{6\,k^2\,(r_{.3}+2\,r_{.5})+8\,t_{.3}}{(1+2\,k^2)^2\,(r_{.3}+2\,r_{.5})\,t_{.3}}$

	$2^+_{.}\sigma^{\parallel}{}_{\alpha\beta}$	$2^+_{.}\tau^{\parallel}{}_{\alpha\beta}$	$2^-_{.}\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^+_{.}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{2}{3\,k^2\,r_{.3}}$	0	0
$2^+_{.}\tau^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^-_{.}\sigma^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	0

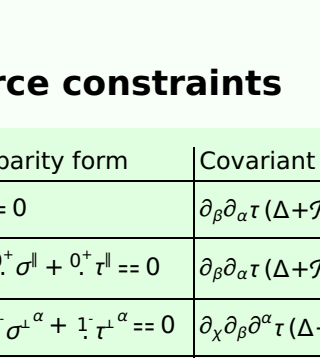
Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^+_{.}\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$-2\,i\,k\,0^+_{.}\sigma^{\parallel} + 0^+_{.}\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha}{}_{\alpha} + 2\,\partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha}{}_{\alpha}{}^{\beta}$	1
$2\,i\,k\,1^-_{.}\sigma^{\perp\,\alpha} + 1^-_{.}\tau^{\perp\,\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{\alpha\beta} + 2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	3
$1^-_{.}\tau^{\parallel\,\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{\beta\alpha}$	3
$i\,k\,1^+_{.}\sigma^{\perp\,\alpha\beta} + 1^+_{.}\tau^{\parallel\,\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\alpha\beta} + 2\,\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + 2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta} == \partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha} + 2\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$	3
$2^-_{.}\sigma^{\parallel\,\alpha\beta\chi} == 0$	$3\,\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon} + 3\,\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta}{}_{\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\alpha\chi\delta} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\chi\alpha\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\delta\alpha\chi} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\beta\alpha\delta} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\alpha\beta\chi} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\chi\alpha\beta} + 3\,\eta^{\beta\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\alpha}\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\beta\epsilon} + 3\,\eta^{\beta\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\alpha}{}_{\delta} == 3\,\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon} + 3\,\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha}{}_{\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\beta\chi\delta} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\chi\beta\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\delta\beta\chi} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\alpha\beta\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\beta\alpha\chi} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\chi\alpha\beta} + 3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\beta}\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\,\eta^{\beta\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\alpha\epsilon} + 3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\beta}{}_{\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\beta\alpha\chi} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\chi\alpha\beta} + 3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\beta}\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\,\eta^{\beta\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\alpha\epsilon} + 3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\beta}{}_{\delta}$	5
$2^+_{.}\tau^{\parallel\,\alpha\beta} == 0$	$4\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\delta} + 2\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi}{}_{\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\alpha\beta} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha} + 2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau(\Delta+\mathcal{K})^{\chi\delta} == 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\alpha\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha} + 2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau(\Delta+\mathcal{K})^{\chi}{}_{\chi}$	5
Total expected gauge generators:		21

Massive spectrum

(No particles)

Massless spectrum



Massless particle

Pole residue:	$-\frac{14}{r_{.3}} + \frac{57}{2\,r_{.3}+r_{.5}} - \frac{216}{r_{.3}+2\,r_{.5}} > 0$
Polarisations:	2

Unitarity conditions

$$(r_{.3} < 0\ \&\&\ (r_{.5} < -\tfrac{r_{.3}}{2}\ ||\ r_{.5} > -2\,r_{.3}))\ ||\ (r_{.3} > 0\ \&\&\ -2\,r_{.3} < r_{.5} < -\tfrac{r_{.3}}{2})$$