

Particle spectrograph

Wave operator and propagator

$$S = \iiint (\beta (h_{\alpha\beta} h^{\alpha\beta} - h^\alpha_\alpha h^\beta_\beta) + h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \frac{1}{2} \alpha (\partial_\beta h^\alpha_\alpha \partial^\beta h^\alpha_\alpha + 2 \partial_\alpha h^{\alpha\beta} \partial_\beta h^\alpha_\alpha - 2 \partial^\beta h^\alpha_\alpha \partial_\alpha h^\beta_\beta - \partial_\alpha h_{\alpha\beta} \partial^\alpha h^{\beta\beta})) [t, x, y, z] dz dy dx dt$$

#1 0 ⁺ h	#2 0 ⁺ h	#1 0 ⁺ τ	#2 0 ⁺ τ	#1 2 ⁺ τ ^{αβ}	#1 2 ⁺ h ^{αβ}	(No source constraints)	#1 1 ⁺ τ ^α													
0 ⁺ h†	<table><tr><td>-2β + ακ</td><td>-√3β</td></tr><tr><td>-√3β</td><td>0</td></tr></table>	-2β + ακ	-√3β	-√3β	0	0 ⁺ τ†	<table><tr><td>0</td><td>-1/√3β</td></tr><tr><td>-1/√3β</td><td>2β-ακ/3β²</td></tr></table>	0	-1/√3β	-1/√3β	2β-ακ/3β²	<table><tr><td>1/βκ/2</td></tr></table>	1/βκ/2	<table><tr><td>β - ακ/2</td></tr></table>	β - ακ/2	<table><tr><td>1⁺hα</td></tr></table>	1 ⁺ hα	<table><tr><td>1⁺τ†α</td><td>1/β</td></tr></table>	1 ⁺ τ†α	1/β
-2β + ακ	-√3β																			
-√3β	0																			
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1/βκ/2																				
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1 ⁺ τ†α	1/β																			
0 ⁺ h†		0 ⁺ τ†		2 ⁺ τ ^{αβ}	2 ⁺ h ^{αβ}	1 ⁺ h†α	<table><tr><td>β</td></tr></table>	β												
β																				

Massive and massless spectra

Pole residue:	κ/2 > 0
Square mass:	2β/α > 0
Spin:	2
Parity:	Even

Massive particle

(No particles)

Unitarity conditions

