Erratum: Poincaré constraints on celestial amplitudes

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ABSTRACT: We provide corrections to equations (5.31), (5.32) and (5.33) in the original manuscript. The corrections remove typos due to which some terms in the results were omitted. The concepts, derivation strategy and conclusions remain unchanged.

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1 Section 5 corrections

Equations (5.31), (5.32) and (5.33) in the original manuscript [1] are to be replaced by

$$0 = \frac{m_4 \epsilon_4 \sqrt{z\bar{z}}}{\Delta_4 - 1} \left(\left(\frac{\Delta_4 - 1}{2} + (h_2 - h_1)z + h_3 \right) f_{\bar{h}_1, \bar{h}_2, \bar{h}_3, \frac{\Delta_4 - 1}{2}}^{h_1, h_2, h_3, \frac{\Delta_4 - 1}{2}} + (z - 1)z \partial_z f_{\bar{h}_1, \bar{h}_2, \bar{h}_3, \frac{\Delta_4 - 1}{2}}^{h_1, h_2, h_3, \frac{\Delta_4 - 1}{2}} \right) \\ + 2\epsilon_3 \sqrt{z\bar{z}} f_{\bar{h}_1, \bar{h}_2, \bar{h}_3 + \frac{1}{2}, \frac{\Delta_4}{2}}^{h_1, h_2, h_3 + \frac{1}{2}, \frac{\Delta_4}{2}} + 2z\epsilon_2 f_{\bar{h}_1, \bar{h}_2 + \frac{1}{2}, \bar{h}_3, \frac{\Delta_4}{2}}^{h_1, h_2 + \frac{1}{2}, h_3, \frac{\Delta_4}{2}}, \quad (5.31)$$

$$0 = \frac{m_4 \epsilon_4 \sqrt{z\bar{z}}}{\Delta_4 - 1} \left(\left(\frac{\Delta_4 - 1}{2} + (\bar{h}_2 - \bar{h}_1)\bar{z} + \bar{h}_3 \right) f_{\bar{h}_1, \bar{h}_2, \bar{h}_3, \frac{\Delta_4 - 1}{2}}^{h_1, h_2, h_3, \frac{\Delta_4 - 1}{2}} + (\bar{z} - 1)\bar{z} \partial_{\bar{z}} f_{\bar{h}_1, \bar{h}_2, \bar{h}_3, \frac{\Delta_4 - 1}{2}}^{h_1, h_2, h_3, \frac{\Delta_4 - 1}{2}} \right) \\ + 2\epsilon_3 \sqrt{z\bar{z}} f_{\bar{h}_1, \bar{h}_2, \bar{h}_3 + \frac{1}{2}, \frac{\Delta_4}{2}}^{h_1, h_2, h_3 + \frac{1}{2}, \frac{\Delta_4}{2}} + 2\bar{z}\epsilon_2 f_{\bar{h}_1, \bar{h}_2 + \frac{1}{2}, \bar{h}_3, \frac{\Delta_4}{2}}^{h_1, h_2 + \frac{1}{2}, h_3, \frac{\Delta_4}{2}}, \quad (5.32)$$

$$0 = \frac{m_4 \epsilon_4 \sqrt{z\bar{z}}}{\Delta_4 - 1} \left(\left(\frac{1 - \Delta_4}{2} + (h_1 - h_2)z - h_3 \right) \left(\frac{\Delta_4 - 1}{2} + (\bar{h}_2 - \bar{h}_1)\bar{z} + \bar{h}_3 \right) f_{\bar{h}_1, \bar{h}_2, \bar{h}_3, \frac{\Delta_4 - 1}{2}}^{h_1, h_2, h_3, \frac{\Delta_4 - 1}{2}} \right. \\ \left. + z\bar{z}(z - 1)(\bar{z} - 1) \partial_z \partial_{\bar{z}} f_{\bar{h}_1, \bar{h}_2, \bar{h}_3, \frac{\Delta_4 - 1}{2}}^{h_1, h_2, h_3, \frac{\Delta_4 - 1}{2}} \right) + m_4 \epsilon_4 \Delta_4 \sqrt{z\bar{z}} f_{\bar{h}_1, \bar{h}_2, \bar{h}_3, \frac{\Delta_4 + 1}{2}}^{h_1, h_2, h_3, \frac{\Delta_4 + 1}{2}} \\ + \epsilon_2 (2(\Delta_1 - \Delta_2 + \Delta_4 - 1)z\bar{z} - z(2\bar{h}_3 + \Delta_4 - 1) - \bar{z}(\Delta_4 + 2h_3 - 1)) f_{\bar{h}_1, \bar{h}_2 + \frac{1}{2}, \bar{h}_3, \frac{\Delta_4}{2}}^{h_1, h_2 + \frac{1}{2}, h_3, \frac{\Delta_4}{2}} \\ + 2\epsilon_3 \sqrt{z\bar{z}} ((\bar{h}_1 - \bar{h}_2)\bar{z} + (h_1 - h_2)z - \Delta_3) f_{\bar{h}_1, \bar{h}_2, \bar{h}_3 + \frac{1}{2}, \frac{\Delta_4}{2}}^{h_1, h_2, h_3 + \frac{1}{2}, \frac{\Delta_4}{2}}, \quad (5.33)$$

respectively. These corrections remove typos due to which some terms in the results were omitted. All concepts, derivation strategy and conclusions remain unchanged.

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References

- [1] Y.T.A. Law and M. Zlotnikov, *Poincaré constraints on celestial amplitudes*, [*JHEP* **03** \(2020\) 085](#) [[arXiv:1910.04356](#)] [[INSPIRE](#)].