Notes on the Book
Scattering Amplitudes in Gauge Theory and Gravity

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Chapter 1

Introduction

This document contains notes on the book:

> Scattering Amplitudes in Gauge Theory and Gravity
> by Henriette Elvang and Yu-tin Huang.
> Cambridge University Press (2015).
> ISBN: 9781107069251

Errata has been published at: https://sites.google.com/a/umich.edu/h-elvang/home/amplitudes-textbook/textbook-errata

> Please send a message to elvang(at)umich.(DoNotIncludeThis.)edu
> when you find a mistake in the book.

> Errata: (updated 4/27/2016)

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Editor: Paul Schulz ¡paul@mawsonlakes.org¿

Chapter 2

Errata

2.1 Chapter 2

p.18 Bottom: the Feynman rules for outgoing fermions should of course have bars on the $u_{+/-}$ in the gray box. Somehow those got erased in the editorial process, booo!

p.26 Exercise 2.10(c). Missing subscripts $a\dot{b}$ on the RHS of the expression for the polarization. (Reyimuaji Yakefu 8/22/2016)

p.27 Equation (2.55). Missing minus after the last equality. So it should read

$$... = - \langle 13 \rangle [3q]$$

(Filipe Rudrigues 3/23/2015)

p.31 Equation (2.67): index mistake - last term should have index structure $A^\mu A^\nu A_\mu A_\nu$. (João Caldeira 4/27/2016)

p.31 Equation (2.72): $f^{12b} f^{b34} = -Tr(1234) + Tr(1243) + Tr(1342) - Tr(1432)$. (Steve Naculich and Anatoliy Dovbnya 7/23/2016)

p.33 Second line, second equation should be $[q_2 3] < 13 >= -[q_2 2] < 12 >$. (João Caldeira 4/27/2016)

p.36 Equation (2.92) and line below: $A_4(...)$ should be $A_4[...]$ to properly indicate that these are color-ordered amplitudes (three instances). Also, note inconsistency about factors of g^2 between (2.73), (2.91), and (2.92). (Reyimuaji Yakefu 8/22/2016)

2.2 Chapter 3

p.58 Exercise 3.5. Right above (3.31) the text should refer to Exercise 2.17 instead of Exercise 2.16. (Filipe Rudrigues 3/23/2015)

p.66 Equation (3.49): the helicity assignment for line 4 in the diagram should be +, not -. (Andrew Ballin, 5/31/2018)

p.67 Equation (3.52): the helicity assignment for line 4 in the diagram should be $+$, not -. (Andrew Ballin, 5/31/2018)

2.3   Chapter 4

p.76 Equation (4.25): subscript on b in the second equation of the first line should be $+$ not -, i.e. it should read $[Q, c_+(i)] = [i|b_+(i)$. (Filipe Rudrigues 3/30/2015)

2.4   Chapter 5

p.97 Equation (5.6): the expression for $K_{a\dot{a}}$ is missing a sum over i. Also, in the expression for Q^{aA} the $[i|$ has an erroneous subscript i. (Filipe Rudrigues 5/15/2015)

p.100 Below (5.20): the (super)twistors scale homogeneously with t_i^{-1}, not t_i. (Filipe Rudrigues 5/15/2015)

2.5   Chapter 6

p.122 Equation (6.15): the second S should have a dagger. Also, it would have been more natural to have called the summation index f (instead of i) since the sum is over all possible final states.

p.123 Equation (6.19): in the triangle and bubbles integrals, it should be $(2\pi)^D$ instead of $(2\pi)^4$. (Filipe Rudrigues 6/1/2015)

p.129 Equation (6.33): the third integral coefficient (14-channel) is wrong. The numerator should be $u(10s^2+2su+3u^2)$. (Jung-Wook Kim 12/12/2017 and David Damgaard 12/6/2018)

2.6   Chapter 8

p.166 Equation (8.20): missing equal-sign between the two diagrams. (Fayez Abuajamieh 9/12/2016)

p.168 Above equation (8.25): the solution $\ell^{(2)}$ forces the vertex to be MHV (not anti-MHV), as indicated correctly in the RHS figure in (8.25). (Fayez Abuajamieh 9/12/2016)

2.7   Chapter 9

p.187 11 lines below equation (9.24): $k \to (n - k - 2)$ should be $k \to n - k$. (Xing Wang 6/16/2021)