

**“Quantum Gravity”, Carlo Rovelli.  
Errata**

Page xiii, par 3 : It is difficult to underestimate  $\mapsto$  It is difficult to over-estimate.

Page 35, eq (2.10) :  $= O \mapsto = 0$  .

Page 37, eq (2.27) :  $= \delta^{ij} \bar{\Sigma}_k \wedge \bar{\Sigma}^k \mapsto = - \delta^{ij} \bar{\Sigma}_k \wedge \bar{\Sigma}^k$  .

Page 38, eq (2.35) : add to the r.h.s.: “+ complex conjugate”.

Page 53, line 10 : the set of the objects that surround it  $\mapsto$  the (internal) boundary of the set of the objects that surround it.

Page 44, eq (2.78) :  $+ \dot{\gamma}^\mu \mapsto - \dot{\gamma}^\mu$  .

Page 48, 7 lines before 2.2 : Clarity is this  $\mapsto$  Clarity in this.

Page 64, footnote 20 :  $t = x^{-1} \circ T \mapsto t = T \circ x^{-1}$ .

Page 81, after (2.149) and last : (2.141)  $\mapsto$  (2.142).

Page 91, 4 lines above (2.155) : it four vertices  $\mapsto$  its four vertices.

Page 92-93 : the signature convention used here is different from the one in page xix.

Page 112, eq (3.56) :  $+N_i \mapsto -N_i$  .

Page 126 (3.122-3) :  $+N \mapsto -N$  .

Page 129, 7 lines from end : strategy as  $\mapsto$  strategy has.

Page 148, last line : from the action (2.30)  $\mapsto$  from the action (2.27) .

Page 149, eq (4.27) : In the last two lines,  $A_c^i \mapsto \dot{A}_c^i$ .

Page 157, eq (4.52) :  $dx^\nu \mapsto dx^\mu$  .

Page 158, eq (4.56) :  $P_{IJi} \wedge e^I \wedge e^J \wedge F^i = 0 \quad \mapsto \quad P_{IJi} \wedge e^I \wedge F^i = 0$  .

Page 168, eq (5.11) :  $\sqrt{\frac{m\omega}{\hbar \sin[\omega(t-t')]} e^{-\frac{i}{\hbar} \left[ \frac{(\alpha^2 + \alpha'^2) \cos[\omega(t-t')] - 2\alpha\alpha'}{\sin^2[\omega(t-t')]} \right]} \mapsto \sqrt{\frac{m\omega}{i\hbar \sin[\omega(t-t')]} e^{\frac{i\omega m}{2\hbar} \left[ \frac{(\alpha^2 + \alpha'^2) \cos[\omega(t-t')] - 2\alpha\alpha'}{\sin[\omega(t-t')]} \right]}$

Page 172, eq (5.28) :  $\langle f|f \rangle \mapsto \langle f|f \rangle_{\mathcal{H}}$ .

Page 172, eq (5.28) :  $(f|P|f) \mapsto \langle f|P|f \rangle_{\mathcal{K}}$ .

Page 174, (5.41) and (5.43) :  $e^{-iHt} \mapsto e^{-iH_0t}$ .

Page 182, (5.82) :  $\hbar$  factors are missing.

Page 191, (5.132) :  $W[\varphi_1, 0, \varphi_2, -iT] \mapsto W[0, \varphi_1, iT, \varphi_2]$ .

Page 199, (5.153) :  $|j_l, i_l, k_l\rangle \mapsto |j_l, \beta_l, \alpha_l\rangle$ .

Page 200, line 3 :  $SU(2) \mapsto G$ .

Page 205, eq (5.166) :  $\rho \mapsto \rho_0$ .

Page 205, 6 lines after (5.170) : (5.165) make  $\mapsto$  (5.165) makes.

Page 235, eq (6.29), second line :  $n_{N-1} \mapsto n_{N-1} + 1$ , twice.

Page 235, 3 lines after (6.29) : links  $l \mapsto \text{link } l$ .

Page 236, 2 lines after (6.32) : form  $\mapsto$  forms.

Page 239, lines above (6.44) : show that the image of this map  $\mapsto$  show that the (closure in norm of the) image of this map.

Page 239, lines above (6.45) : the image of  $P_{\text{diff}}$   $\mapsto$  the (closure in norm of the) image of  $P_{\text{diff}}$ .

Page 240, eq (6.50) :  $D_{\Psi'} \mapsto D_{\Psi''}$ .

Page 240, line after (6.50) : subgroup  $D_{\Psi'}$  of  $\text{Diff}^*$  that leaves  $\Psi'$   $\mapsto$  subgroup  $D_{\Psi''}$  of  $\text{Diff}^*$  that leaves  $\Psi''$ .

Page 241, 4 lines after (6.53) :  $G_\gamma \mapsto G_\Gamma$ .

Line 5 of pg 247; 2 and 6 of 248 :  $A(\mathcal{S}) \mapsto \mathbf{A}(\mathcal{S})$ .

Page 247, 2 lines after (6.73) : (6.74)  $\mapsto$  (6.72).

Page 251, eq (6.88) :  $1/2 \mapsto 1$ .

Page 253, several :  $\mathcal{D}_I \mapsto \mathcal{D}$ .

Page 254, eq (6.106) :  $I_\epsilon \mapsto I$ , twice.

Page 259, eq (6.125) : In the multiplicative factor,  $\pi$  is missing.

Page 259, 2 lines after eq (6.88) :  $j_i^d \mapsto j_i^t$ .

Page 269, line above (6.143) :  $l/l_P \mapsto l_P/l$ . Same in eqs (6.143) and (6.144).

Page 270, line after (6.147) :  $a_0 \mapsto a_0^{-2}$ .

Page 275, par 1, 2nd line : Add: On angle operators, see [189bis]. An appealing and well written introduction to spin networks and their geometry is Seth Major's [189ter].

Page 275, par 2, 2nd line : Jerry Lewandowski  $\mapsto$  Jerzy Lewandowski.

Page 320, line 9 : form a finite dimensional subspace  $\mapsto$  form a subspace.

Page 350, line after (9.96b) : two equations  $\mapsto$  equation.

Page 351, line 3 : the system (9.89)  $\mapsto$  the system (9.96).

Page 351, line 11 :  $B_{\mu\nu}^{IJ} \mapsto B_{\rho\sigma}^{KL}$  .

Page 352, last line : The BBC modes have  $\mapsto$  The BBC model has.

Page 347 : Equations (9.83) and (9.84) are incorrect.

Page 382, eq (A.27) :  $\alpha_4\beta_2 \mapsto \alpha_4\beta_3$ .

Page 388 :  $p$  in Tet  $\mapsto q$  .

Page 428, Ref 77 : Phys. Rev. D.  $\mapsto$  Phys. Rev.

Page 456 : Add: [189bis] S. Major, "Operators for quantized directions", Class.Quant.Grav. **16** (1999) 3859-3877.

Page 456 : Add: [189ter] S. Major, "A Spin Network Primer", Am. J. Phys. **67** (1999) 972-980.

Page 453, before Maldacena : Add: Major, 275

Page 453, before Ooguri : Add: Oeck, 221

All over the book : Clebsh–Gordon  $\mapsto$  Clebsch–Gordan.

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