

# Erratum Page

for the book: Elements of String Cosmology,

M. Gasperini, Cambridge University Press, Cambridge UK (2007)

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## Chapter 1

- p. 4, Eq. (1.11), first line:  $\Gamma_{ij}^0$  should be replaced by  $-\Gamma_{ij}^0$ .
- p. 12, Eq. (1.45): a minus sign is missing after the second equality (in front of  $dt/a$ ) and after the third equality (in front of  $(1+z)$ ).
- p. 12, Eq. (1.46), right-hand side, third line (the case with  $\alpha < 0$ ): the square roots  $\alpha^{-1/2}$  and  $\sqrt{a}$  should be replaced, respectively, by  $|\alpha|^{-1/2}$  and  $\sqrt{|a|}$ .
- p. 13, the last sentence before Eq. (1.48), (“The energy flux ...”) is to be replaced by:  
“The energy flux received at  $r = 0$  (i.e. the received power  $L_0 = (dE/dt)_0$ , per unit surface, at  $t = 0$ ), is then given by:”
- p. 13, in Eq. (1.48),  $L_0$  is to be replaced by  $F_0$ .
- p. 13: Eq. (1.49) is to be replaced by  
“ $d_0 \equiv a_0 r_{em}(z)$ ”
- p. 13: the text in the first line after Eq. (1.49) is to be replaced by:  
“is the so-called “angular distance” of the observer as seen by the source, and expressed as a function of  $z$  as in Eq. (1.47). Because ...”
- p. 13, two lines before Eq. (1.50): “the apparent luminosity  $L_0$ ” is to be replaced by “the received flux  $F_0$ ”
- p. 13, in Eq. (1.50),  $L_0$  is to be replaced by  $F_0$ .
- p. 13, two lines after Eq. (1.50): “ $L_{em}/L_0$ ” is to be replaced by “ $L_{em}/F_0$ ”.
- p. 13, in Eq. (1.52),  $L_0$  is to be replaced by  $F_0$ .

## Chapter 3

- p. 93, Eq. (3A.12): there is a wrong sign on the right-hand side of the second equation. The corrected equation is:

$$\frac{1}{2}(T_{00} - T_{10}) = \frac{1}{4}\eta_{\mu\nu} (\dot{X}^\mu - X'^\mu) (\dot{X}^\nu - X'^\nu) = 0 \quad (1)$$

- p. 101, Eq. (3A.63): in the last term on the first line, and in the first term on the second line, the symbol  $\alpha'_0$  should be replaced by  $\alpha''_0$ .
- p. 111, second line of Eq. (3B.36): the integral  $\int_0^\pi$  should be replaced by  $\int_{-\pi}^\pi$ .

## Chapter 7

- p. 319, Eq. (7.249):  $d\nu$  should be replaced by  $dt'$ .
- p. 320, Eq. (7.254):  $\sin(\pi ft)$  should be replaced by  $\sin(\pi fT)$ .

## Chapter 8

- p. 339, five lines before Eq. (8.18):  $T_{ij}$  should be replaced by  $\delta T_{ij}$ .
- p. 342, second line: “traceless” should be replaced by “transverse”.
- p. 344, fourth line: “extrinsic” should be replaced by “intrinsic”.
- p. 344, fifth line: the symbol  $R_{ij}$  should be replaced by  $R_{ij}^{(3)}$ .
- p. 344, four lines above Eq. (8.40): the sentence “both in the longitudinal and uniform-curvature gauge” should be replaced by “in the longitudinal gauge”.
- p. 345, Eq. (8.43): the connection  $\Gamma$  should be replaced by the *intrinsic* connection  $\Gamma^{(3)}$ .
- p. 345, three lines above Eq. (8.46): the sentence “The same is true in the uniform-curvature gauge” should be replaced by “The same is true for the perturbation of the spatial Ricci tensor in the uniform-curvature gauge”.
- p. 345, Eq. (8.46): in the first line,  $\delta R_{ij}^{(3)}$  should be replaced by  $\delta R_{ij}$ . In the second line,  $\delta R^{(3)} = g^{ij} \delta R_{ij}^{(3)}$  should be replaced by  $\delta R = g^{ij} \delta R_{ij}$ .
- p. 345, first line below Eq. (8.46):  $\delta R^{(3)}$  should be replaced by  $\delta R$ .

## Chapter 10

- p. 485, Eq. (10.3), first line:  $\sqrt{|f|}$  is to be integrated over the external coordinates  $x^\mu$ . In particular,  $\int d^n y \sqrt{|f|}$  should be replaced by  $\int d^n y$ , and  $e^{-\phi}$  should be replaced by  $e^{-(\phi - \log \sqrt{|f|})}$ .
- p. 485, three lines above Eq. (10.4):  $V_n$  should be defined as  $V_n = \int d^n y$ , without  $\sqrt{|f|}$ .
- p. 485, after Eq. (10.5), a factor  $\sqrt{|f|}$  is missing in the definition of  $g_s^2$ , which should read:  $g_s^2 = \exp(\phi - \log \sqrt{|f|})$ .
- p. 488, two lines above Eq. (10.8): “intrinsic curvature” should be replaced by “extrinsic curvature”.
- p. 497, Eq. (10.46): the integration variable is missing.  $d^{D-1} \sqrt{|h|}$  should be replaced by  $d^{D-1} \xi \sqrt{|h|}$ .
- p. 508, three lines after Eq. (10.110): “for  $\lesssim k^{-1}$ ” should be replaced by “for  $r \lesssim k^{-1}$ ”
- p. 512, after Eq. (10.124):  $\lambda_P^{d-3}$  should be replaced by  $\lambda_P^{D-3}$ .
- p. 513, in Eq. (10.129): “TeV” should be replaced by “TeV”.
- p. 521, Eq. (10.166): the last term on the right-hand side should be divided by two, namely  $\rho_G / \lambda_P^{D-3}$  should be replaced by  $\rho_G / (2\lambda_P^{D-3})$ .