

Errata Corrige for
Dark Energy, Theory and Observations,
by L. Amendola and S. Tsujikawa, CUP 2010

Chapter 2

p. 9

Line after Eq. 2.16

$$u^\mu = (1, 0, 0, 0) \tag{1}$$

instead of

$$u^\mu = (-1, 0, 0, 0) \tag{2}$$

Chapter 4

p. 44, Eqs. 4.16-4.19

add the equation

$$\delta\Gamma_{jk}^i = \Phi_{,k}\delta_j^i + \Phi_{,j}\delta_k^i - \Phi_{,m}\delta^{im}\delta_{jk} \tag{3}$$

p. 45, two lines after eq. (4.26)

the equation should be $\nabla^2 f \equiv f_{|i}^i$.

p. 61

The last sentence should read

“In fact, if we assume that the vector \mathbf{r} in the cosine”

p. 78, first line:

“Dividing Eq. (4.224) with respect to” should be “Dividing Eq. (4.224) by”

p. 81, eq. (4.241)

the second integral on the rhs should have r'' as upper limit, instead of r' .

Chapter 7

p. 141, 3rd line from top:

“Denoting the determinant of the matrix as \mathcal{D} ” should read “Denoting the discriminant as \mathcal{D} ”.

In the itemized list after the 5th line, cases (i) and (ii) should have “ $\mathcal{D} \geq 0$ ” instead of “ $\mathcal{D} > 0$ ”.

In the first line after the itemized list, “If $D = 0$ ” should read “If $\det \mathcal{M} = 0$ ”.

Chapter 8

p. 193, two lines from bottom:

“distance to last scattering increases” should read “distance to last scattering decreases”.

Chapter 11

p. 307

In Eqs. (11.66,11.67) and (11.71), there should be Ψ instead of Φ .

Replace eq. 11.70 with

$$\delta_\phi \equiv \frac{\delta\rho_\phi}{\rho_\phi}$$

p. 308

In Eq. (11.75) the term $3Q_i\phi'$ should be $Q_i\phi'$.

In Eq. (11.77) the term $-\phi'(3\Phi' - \Psi')$ should be $+\phi'(3\Phi' - \Psi')$.

p. 313

Eq. (11.111) should be replaced by

$$M(\phi) = \rho_m a^3 = M_0 e^{\int Q d\phi} \delta_D(0)$$

Two lines after, “together with $M_0 = \rho_m^{(0)} a_0^3 \delta_D(0)$ ” should read “together with $M_0 \delta_D(0) = \rho_m^{(0)} a_0^3$ ”.

Chapter 12

p. 339

The first term in Eq. (12.21) should be

$$\frac{d^2\delta}{dN^2}$$

p. 341

The footnote should be replaced by:

“To agree with most literature in this area, in this section we assume $\delta(\mathbf{x}) = \int \delta_{\mathbf{k}} e^{i\mathbf{k}\cdot\mathbf{x}} d^3k$ for the Fourier transform.”

p. 346

Eq. (12.61) should be

$$\langle \delta(\mathbf{k}, a) \delta(\mathbf{k}', a) \rangle = \frac{(2\pi)^3}{V} \delta_D(\mathbf{k} - \mathbf{k}') P(\mathbf{k}, a)$$

Eq. (12.62), first member, should be

$$\frac{(2\pi)^3}{V} \delta_D(\mathbf{k} - \mathbf{k}') P(\mathbf{k}, a) = \dots$$

Eq. (12.67) should be

$$\langle \delta(\mathbf{k}_1) \delta(\mathbf{k}_2) \delta(k_3) \rangle = \frac{(2\pi)^3}{V} \delta_D(\mathbf{k}_1 + \mathbf{k}_2 + \mathbf{k}_3) B(\mathbf{k}_1, \mathbf{k}_2, \mathbf{k}_3)$$

p. 349, line after eq. 12.80

$U = -3GM/5R$ should be $U = -3GM^2/5R$

Chapter 13

p. 369, eq. 13.39

On the second member, the numerator should read ∂^2 . On the third member, the numerator should read

$$\partial m_{th}(z_n; \Omega_m^{(0)}, \Omega_\Lambda^{(0)}) \partial m_{th}(z_n; \Omega_m^{(0)}, \Omega_\Lambda^{(0)})$$

p. 371, 3 lines from above

“(i.e. $\sigma_{w_0}^2$)” should read ““(i.e. $\sigma_{w_p}^2$)”

p. 371, eq. 13.49

the top-right entry of the matrix should be $a_p - 1$ instead of $1 - a_p$.

Chapter 16

p. 447,

in Problem 13.3 all the occurrences of $(\theta - \theta_{max})$ should be squared, i.e. $(\theta - \theta_{max})^2$.