Errata for Topics in Algebraic Geometry by Luc Illusie

Xiaolong Liu

Abstract

These notes correct a few typos and errors in *Topics in Algebraic Geometry* by Prof. Luc Illusie. The original book is [Illusie].

▶ Remarks.

♠ 1. **Here we assume that a single commutative diagram occupies one line;**

♠ 2. **I omitted the section (4.14) about** Ext **and extensions of groups;**

▶ Errata.

♦ 1. (Page 10, line -6) Actually L, M are considered as two bicomplexes centered at 0-th column instead of mapping cones;

♦ 2. (Page 18, line 2) Replace $\begin{array}{ccc} & & N \\ & {\scriptstyle +1}\nearrow & \uparrow{\scriptstyle v} \\ L & \xrightarrow{u} & M \end{array}$ by $\begin{array}{ccc} & & N \\ & {\scriptstyle +1}\swarrow & \uparrow{\scriptstyle v} \\ L & \xrightarrow{u} & M \end{array}$;

♦ 3. (Page 20, line 5) Replace $L \xrightarrow{u} M \to C(u) \xrightarrow{-pr} L[1]$ by $L \xrightarrow{u} M \xrightarrow{i} C(u) \xrightarrow{-pr} L[1]$;

♦ 4. (Page 21, line -5) Replace $u\tilde{f} = 0$ by $u\tilde{f} = f$;

♦ 5. (Page 24, line 12) Replace $\mathrm{Hom}_{\mathcal{C}(S^{-1})} = H(X,Y)/\sim$ by $\mathrm{Hom}_{\mathcal{C}(S^{-1})}(X,Y) = H(X,Y)/\sim$;

♦ 6. (Page 25, line -3) Replace $\begin{array}{ccc} M[-1] & \longrightarrow & Y \\ {\scriptstyle f'}\uparrow & \nearrow{\scriptstyle f} & \\ X & & \end{array}$ by $\begin{array}{ccc} M[-1] & \xrightarrow{t'} & Y \\ {\scriptstyle f'}\uparrow & \nearrow{\scriptstyle f} & \\ X & & \end{array}$;

♦ 7. (Page 27, the first paragraph) Replace I^Y by I_Y twice and replace $(I_X)^\circ$ by $(I^X)^\circ$;

♦ 8. (Page 27, line 9) Replace $\mathcal{A}$ by $\mathcal{C}$;

♦ 9. (Page 27, line 10) Replace $\varinjlim_{X' \xrightarrow{s} X \in (I_X)^\circ} \mathrm{Hom}_{\mathcal{C}}(X', Y)$ by $\varinjlim_{X' \xrightarrow{s} X \in (I^X)^\circ} \mathrm{Hom}_{\mathcal{C}}(X', Y)$;

♦ 10. (Page 27, line 12) Replace (X', t, f) by (X', s, f);

♦ 11. (Page 27, line -4) Replace $u \in (I_X)^\circ$ by $u \in (I^X)^\circ$;

♦ 12. (Page 28, line 6) Replace $(C\left(S^{-1}\right., Q)$ by $(C(S^{-1}), Q)$;

♦ 13. (Page 28, line -6) Replace $C(\mathcal{A})(S^{-1})$ by $C(\mathcal{A})(\mathrm{qis}^{-1})$;

♦ 14. (Page 32, line 3) Replace $\tau_{\leq a}K \xrightarrow{f} K \xrightarrow{g} \tau_{\geq a+1} \to$ by $\tau_{\leq a}K \xrightarrow{f} K \xrightarrow{g} \tau_{\geq a+1}K \to$ three times;

♦ 15. (Page 36, the second paragraph) Replace all $\tau_{[a,b]}L$ by $\tau_{[a+1,b]}L$ and replace $\tau_{[b-1,b]}L$ by $\tau_{[b,b]}L$;

♦ 16. (Page 40, line 18) Replace $K^+(\mathcal{J})(\text{qis}^{-1})$ by $K^+(\mathcal{I})(\text{qis}^{-1})$;

♦ 17. (Page 40, line -7) Replace (3.8) by (3.10);

♦ 18. (Page 41, line 1) Replace $\{M \to M'',$ where $M'' \in K^+(\mathcal{A})$ by $\{M \to M'',$ where $M'' \in K^+(\mathcal{A})\}$;

♦ 19. (Page 41, line 2) Replace (e.g. 4.13) by (4.18);

♦ 20. (Page 41, second paragraph) This proof probably has a mistake that pashout may not preserve monomorphism, see [Ka];

♦ 21. (Page 42, lemma 4.29) This proof probably has a mistake that pashout may not preserve monomorphism;

♦ 22. (Page 43, line -1) Replace $E' \in \mathcal{A}$ by $E' \in \mathcal{A}'$;

♦ 23. (Page 45, line 4) Replace (4.18) by (4.27);

♦ 24. (Page 45, line -4) Replace $\eta : FQ \to QG$ by $\eta : QF \to GQ$;

♦ 25. (Page 46, line 2,3) Replace $F(\varepsilon(L'))$ by $\varepsilon(L')$;

► **Remarks.**

♠ **If you find errors in my errata, please send to my email: 1225046792@qq.com.**

References

[Illusie] Luc Illusie, *Topics in Algebraic Goemetry*, Université de Paris-Sud Département de Mathématiques, `http://staff.ustc.edu.cn/~yiouyang/Illusie.pdf`.

[Ka] Masaki Kashiwara, Pierre Schapira, *Sheaves on Manifolds*, Springer, 1994.

[St] Stacks project collaborators, *Stacks project*, `https://stacks.math.columbia.edu/`.