

# ERRATA FOR TOPICS IN ALGEBRAIC GEOMETRY BY LUC ILLUSIE

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## 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  $\text{Ext}$  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 
$$\begin{array}{ccc} & N & \\ +1 \nearrow & \uparrow v & \\ L & \xrightarrow{u} & M \end{array}$$
 by 
$$\begin{array}{ccc} & N & \\ +1 \nearrow & \uparrow v & \\ L & \xrightarrow{u} & M \end{array};$$

- ◆ 3. (Page 20, line 5) Replace  $L \xrightarrow{u} M \rightarrow C(u) \xrightarrow{-pr} L[1]$  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  $\text{Hom}_{\mathcal{C}(S^{-1})} = H(X, Y)/\sim$  by  $\text{Hom}_{\mathcal{C}(S^{-1})}(X, Y) = H(X, Y)/\sim$ ;

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

- ◆ 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  $\varinjlim_{X' \xrightarrow{s} X \in (I_X)^\circ} \text{Hom}_{\mathcal{C}}(X', Y)$  by  $\varinjlim_{X' \xrightarrow{s} X \in (I^X)^\circ} \text{Hom}_{\mathcal{C}}(X', Y)$ ;

- ◆ 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  $(C(S^{-1}), Q)$  by  $(C(S^{-1}), Q)$ ;

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

- ◆ 14. (Page 32, line 3) Replace  $\tau_{\leq a}K \xrightarrow{f} K \xrightarrow{g} \tau_{\geq a+1}K \rightarrow$  by  $\tau_{\leq a}K \xrightarrow{f} K \xrightarrow{g} \tau_{\geq a+1}K \rightarrow$  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  $\{M \rightarrow M'', \text{ where } M'' \in K^+(\mathcal{A})\}$  by  $\{M \rightarrow M'', \text{ where } M'' \in K^+(\mathcal{A})\}$ ;
- ◆ 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 pushout may not preserve monomorphism, see [Ka];
- ◆ 21. (Page 42, lemma 4.29) This proof probably has a mistake that pushout 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  $\eta : FQ \rightarrow QG$  by  $\eta : QF \rightarrow GQ$ ;
- ◆ 25. (Page 46, line 2,3) Replace  $F(\varepsilon(L'))$  by  $\varepsilon(L')$ ;
- ◆ 26. (Page 58, line 11) Replace Lemma 6.7 by Proposition 6.7;
- ◆ 27. (Page 60, line -3,-5) Replace zero by trivial;
- ◆ 28. (Page 64, line 6) Replace 6.8 by 6.7;

► **Remarks.**

♠ If you find errors in my errata, please send to my email: [1225046792@qq.com](mailto:1225046792@qq.com).

## References

- [Illusie] Luc Illusie, *Topics in Algebraic Geometry*, 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/>.