Errata in the memoir *Families of Berkovich spaces*

Statements in 4.1.7 and 4.1.12

The argument given for equivalence (i) $\iff$ (ii) in 4.1.7 is wrong, as was pointed out to us by Mathieu Daylies; and this equivalence actually *does not hold*: the construction of 4.4 indeed provides a counter-example to it. This false equivalence was used only as an intermediate step for proving (iii) $\iff$ (iv) in the same paragraph, and for proving the equivalence stated in 4.1.12; we are now going to give correct proofs of the latter.

Proof of equivalence (iii) $\iff$ (iv) of 4.1.7

First step

We assume that $U = X$. We want to prove that X-flatness of $\mathscr{F}$ at y is equivalent to X-flatness of $\mathscr{F}_V$ at y. In fact, it is sufficient to prove the corresponding equivalence for naive flatness (and then to use it after an arbitrary good base change). And this equivalence for naive flatness comes from the fact that $\mathscr{O}_{V,y}$ is flat over $\mathscr{O}_{Y,y}$, together with Lemma 4.1.6 in the easy case where $A = C$.

Second step

We now prove the general case. Assume that $\mathscr{F}$ is X-flat at y. Then since flatness is *by definition* stable under arbitrary good base change, $\mathscr{F}_{Y \times_X U}$ is U-flat at y. By the first step, this implies that $\mathscr{F}_V$ is U-flat at y.

Assume conversely that $\mathscr{F}_V$ is U-flat at y. This implies that it is X-flat at y. Indeed, it is sufficient to prove the corresponding implication for naive flatness (and then to use it after an arbitrary good base change). And this implication for naive flatness comes from the fact that $\mathscr{O}_{U,x}$ is flat over $\mathscr{O}_{X,x}$. And now by the first step, X-flatness of $\mathscr{F}_V$ at y implies that of $\mathscr{F}$ at y.

Proof of the equivalence stated in 4.1.12

This is an immediate consequence of the equivalence stated in 4.1.8 (which itself rests on the equivalence (iii) $\iff$ (iv) of 4.1.7).

Proof in 11.3.1.4

This proof is correct, but can be slightly shortened. The first paragraph of the proof should remain unchanged. Then one should write the following:

We are currently working on the assumption (A); i.e., $\mathscr{F}$ satisfies P fiberwise. In particular, $\mathscr{F}$ satisfies P fiberwise at t. Now since V is reduced (it is even normal) and since $d_k(z) = \dim V$, it follows from Thm. 6.1.3 that $\mathscr{O}_{T_z,t}$ is flat over $\mathscr{O}_{T,t}$. As P satisfies $(\mathsf{H}_{\text{reg}})$ this implies that $\mathscr{F}$ satisfies P at t, which contradicts the fact that $t \in D$.