CORRECTION TO 'DERIVING DG CATEGORIES'

BERNHARD KELLER

I thank R.-O. Buchweitz for his letter [1], where he points out the following error: Lemma 3.3 of [2] is not true in the form it is stated in the article. The error occurs in the first line of the proof. To correct the error, the assertion of Lemma 3.3 should be replaced by the following:

> If the complexes N^{*r} and Z^{*r} are acyclic for all $r \in \mathbf{Z}$, then $Tot(N)$ and $tot(N)$ are acyclic.

The first two sentences of the proof should be replaced by

> If N^{*r} and Z^{*r} are acyclic for all $r \in \mathbf{Z}$, then so are the B^{*r}.

The rest of the proof remains unchanged. The lemma is applied exactly twice, namely in the proof of theorem 3.1 of [loc.cit.] and in the (omitted) proof of theorem 3.2. To adapt the proof of theorem 3.1 to the corrected version of lemma 3.3, the definition of the class of conflations $\mathcal{E}$ at the bottom of page 70 should be replaced by the following

> Its class of conflations $\mathcal{E}$ consists of the sequences
> $$L \to M \to N$$
> such that the sequences
> $$0 \to L(A)^n \to M(A)^n \to N(A)^n \to 0$$
> and
> $$0 \to Z^n L(A) \to Z^n M(A) \to Z^n N(A) \to 0$$
> are short exact for all $A \in \mathcal{A}$ and all $n \in \mathbf{Z}$. The isomorphisms ...

The rest of the proof (from line 11 on page 71 onwards) remains unchanged. The (omitted) proof of theorem 3.2 should be changed accordingly.

A (much less important) mistake is the use of the word 'flat' in the article [2]: whenever it refers to a complex M of k-modules, it should be interpreted as meaning that the functor $M \otimes_k ?$ takes (possibly unbounded) acyclic complexes of k-modules to acyclic complexes.

Date: May 26, 2000.

References

[1] R.-O. Buchweitz, *Letter to B. Keller*, May 23, 2000.
[2] B. Keller, *Deriving DG categories*, Ann. Scient. ENS **27** (1994), 63–102.

UFR de Mathématiques, UMR 7586 du CNRS, Case 7012, Université Paris 7, 2, place Jussieu, 75251 Paris Cedex 05, France

E-mail address: `keller@math.jussieu.fr`
`www.math.jussieu.fr/~keller`