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SLOPE FILTRATIONS: *ERRATUM*

YVES ANDRÉ

Abstract. Erratum for the paper “Slope Filtrations”, Confluentes Mathematici, Vol. 1, No. 1 (2009) 1–85

- (1) Example 1.2.2.(2): actually, the usual orthogonal sum is neither a coproduct (nor a product), and in fact, the category of hermitian spaces does not admit finite coproducts (this is not used elsewhere).
- (2) Discard Lemma 1.2.8 and the undefined notion of “refinement”, which are used only in Proposition 1.4.18. Replace the given proof of Proposition 1.4.18 by the following:

Proof. — It suffices to show (by induction on $\text{rk } N$) that for any strict subobject N of M , the point $(\text{rk } N, \text{deg } N)$ lies below $NP(M)$. If i denotes the minimal index such that N is contained in the notch M_i of the flag $\mathcal{F}(M)$, this amounts to: $\text{deg } N \leq \text{deg } M_{i-1} + \lambda_i(\text{rk } N - \text{rk } M_{i-1})$.

Let $p : N \hookrightarrow M_i \twoheadrightarrow M_i/M_{i-1}$ be the composed morphism. Since M_i/M_{i-1} is semistable of slope λ_i and $N/(N \cap M_{i-1}) \rightarrow \text{Im } p$ is epi-monic, one has $\mu(N/(N \cap M_{i-1})) \leq \lambda_i$. By additivity of rk and deg in the sequence $0 \rightarrow (N \cap M_{i-1}) \rightarrow N \rightarrow N/(N \cap M_{i-1}) \rightarrow 0$, one gets

$$\text{deg } N \leq \lambda_i(\text{rk } N - \text{rk}(N \cap M_{i-1})) + \text{deg}(N \cap M_{i-1}).$$

On the other hand, by induction, the point $(\text{rk}(N \cap M_{i-1}), \text{deg}(N \cap M_{i-1}))$ lies below $NP(M)$, which implies that

$$\text{deg}(N \cap M_{i-1}) \leq \text{deg } M_{i-1} - \lambda_i(\text{rk } M_{i-1} - \text{rk}(N \cap M_{i-1})).$$

By combining the last two inequalities, one gets $\text{deg } N \leq \text{deg } M_{i-1} + \lambda_i(\text{rk } N - \text{rk } M_{i-1})$ as wanted. \square

- (3) In Lemma 1.2.18, replace the sum $N + P$ in the sense of Section 1.2.3, which is the image of $N \oplus P \rightarrow Q$, by the coimage of this morphism (which is the usual sum of N and P in the abelian envelop \mathcal{A}). This lemma is not used elsewhere in the paper.

REFERENCES

- [1] Yves André, *Slope filtrations*, Confluentes Math. 1(1):1–85, 2009.

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