Corrigendum to Complete homology and related dimensions of groups

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We have realized that the statement and proof of Proposition 4.5 (2) of [5] is incorrect. Note that for a ring R , the following hold (cf. [4]):

- (1) A right R -module M is flat if and only if its character module

$$M^* := \operatorname{Hom}_{\mathbb{Z}}(M, \mathbb{Q}/\mathbb{Z})$$

is an injective left R -module.

- (2) If R is right noetherian, then M is injective if and only if M^* is flat.

By the argument of the proof of Proposition 4.5 (2) we can prove that the following holds:

Let G be a group such that $\mathbb{Z}G$ is noetherian. Then $\operatorname{sfl} G = \operatorname{sifl} G$.

Thus unfortunately, we cannot conclude that $\operatorname{hd} G = 0$ if and only if G is locally finite under the assumption in Theorem 4.10 or Corollary 4.11 of [5]. However, Emmanouil proved in [2] that for any group G , $\operatorname{hd} G = 0$ if and only if G is locally finite. In [1], Emmanouil showed that for any group G , $\operatorname{spli} G = \operatorname{silp} G$. Moreover, Emmanouil and Talelli proved in [3] that for any group G , $\operatorname{sifl} G = \operatorname{silp} G$. Also, they gave an example of a group G such that $\operatorname{sfl} G < \operatorname{spli} G < \infty$ in [3]. Hence we conclude that there is an example of a group G with $\operatorname{sfl} G < \operatorname{sifl} G < \infty$.

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