

List of Misprints and additions

1. Page 41, ℓ -4. One should replace the definition of \tilde{H} by

$$\tilde{H} := \{g \in G \mid \text{for all } (m, n) \text{ } g \text{ stabilizes } (T^{m,n}V)^H \text{ pointwise}\}.$$

This is a subgroup of G containing H and it equals H as soon as for *some* pair (m, n) the collection of $g \in G$ stabilizing $(T^{m,n}V)^H$ pointwise is already equal to H .

The proof of Lemma 2.17 has been formulated somewhat imprecisely and this might lead to a misunderstanding. For H reductive, let us give some more details. As explained on p. 42

$$H = \{g \in G \mid g \text{ stabilizes a line } L \subset W\},$$

W some G -representation which one may assume to be equal to a direct sum of some $T^{m,n}V$. For simplicity assume $W = T^{p,q}V$. Reductivity of H gives a H -stable splitting $W = W' \oplus L$ and since $(L \otimes L^\vee) = (W \otimes W^\vee)^H$ the subgroup of $g \in G$ fixing $(W \otimes W^\vee)^H$ pointwise is H , but $W \otimes W^\vee = T^{m-n, n-m}V$ and by the preceding remark it follows that $\tilde{H} = H$ in this case.

2. Page 42, *Proof (of the theorem)*, line ℓ 6. Replace “Look at the restriction” by:

Consider the homomorphism $\mu : \mathbb{G}_m \rightarrow \text{MT}(V, F)$ sending z to the automorphism of V which acts by multiplication of z^{-p} on $V^{p,q}$. This is how the character z of \mathbb{S} acts through the representation of \mathbb{S} which defines the Hodge structure. In particular, the Zariski-closure of μ (over \mathbb{Q}) is the Mumford-Tate group, and hence the restriction of the rational character χ to the image of μ completely determines χ . By Example 2.2 2), the character $\chi \circ \mu$ defines some Hodge structure of Tate. Hence, replacing (V, F) by a suitable Tate twist we may assume that χ is trivial on the image of μ and hence χ extends to $\text{GL}(V) \times \mathbb{G}_m$. \square