Mathematische Zeitschrift (2019) 292:569–570
https://doi.org/10.1007/s00209-019-02230-y

Mathematische Zeitschrift

CORRECTION

Correction to: A characterization of symplectic Grassmannians

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Published online: 7 February 2019

Correction to: Math Z https://doi.org/10.1007/s00209-016-1807-6

We refer to our original paper, using the same notation.

We thank Jun-Muk Hwang for pointing out that the homomorphism of algebraic groups $\eta : \mathrm{GL}(\mathcal{F}^\vee_{2,x})_{\mathcal{Q}^\vee_x} \to \mathrm{GL}(T_{X,x})$ has a nontrivial kernel (isomorphic to $\mathbb{Z}_2$), preventing us from defining, in Section 3.3, the vector bundles $\mathcal{Q}^\vee$, $\mathcal{F}^\vee_1$, $\mathcal{F}^\vee_2$. However, the main Theorem of the paper may still be proved by slightly modifying our arguments as follows.

1. In Section 3.3, instead of defining the vector bundles $\mathcal{Q}^\vee$, $\mathcal{F}^\vee_1$, $\mathcal{F}^\vee_2$ over X, we may only define the corresponding projective bundles $\mathcal{Z}$, $\mathcal{U}_1$ and $\mathcal{U}_2$ over X, and vector bundles $\mathcal{G}$, $\mathrm{H}\mathcal{G}$ over $\mathcal{U}_1$, whose projectivizations give $\mathcal{U}$ and $\mathrm{H}\mathcal{U}$, fitting in a sequence:

$$0 \to \mathcal{K} \longrightarrow \mathcal{G} \longrightarrow \mathrm{H}\mathcal{G} \to 0,$$

with $\mathcal{K}$ a line bundle.

On the other hand, the desired vector bundles $\mathcal{Q}^\vee$, $\mathcal{F}^\vee_1$, $\mathcal{F}^\vee_2$ may still be constructed over a rational curve ℓ of the family $\mathcal{M}$. By choosing an appropriate twist, they fit in the commutative diagram

The original article can be found online at https://doi.org/10.1007/s00209-016-1807-6.

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$$\begin{array}{ccccc} \bigwedge^2 \mathcal{F}_1 & = & \bigwedge^2 \mathcal{F}_1 & & \\ \downarrow & & \downarrow & & \\ \bigotimes^2 \mathcal{F}_1 & \longrightarrow & \mathcal{F}_1 \otimes \mathcal{F}_2 & \longrightarrow & \mathcal{F}_1 \otimes \mathcal{Q} \\ \downarrow & & \downarrow & & \| \\ S^2\mathcal{F}_1 & \longrightarrow & \Omega_{X|\ell} \otimes \mathcal{O}_\ell(d) & \longrightarrow & \mathcal{F}_1 \otimes \mathcal{Q} \end{array}$$

for $d = 0$ or 1.

2. The computations in Section 4 can then be carried out in the same way, and they provide $\mathcal{O}(\mathrm{H}\mathcal{U}) \cdot \ell = d = 0$.

3. To prove Corollary 5.2 we had used a result of Fujita, which no longer applies, since we do not have a divisor of degree one on the fibers of ρ; however the conclusion of the Corollary is still true, since ρ is equidimensional, by applying [1, Theorem 1.3].

4. The main goal of Section 5 was to prove the existence of an everywhere nondegenerate skew-symmetric form on the vector bundle $\mathcal{Q}$, whose existence is now not clear. However, the arguments of the section provide, verbatim, the existence of an everywhere nondegenerate skew-symmetric form on the bundle $\mathrm{H}\mathcal{G}$.

5. In section 6, we may now consider the A_{r-1}-bundle $\overline{\mathcal{U}}_1 \to X$ associated to $\mathcal{U}_1 \to X$ and the fiber product

$$\begin{array}{ccc} \overline{\mathcal{U}}_1 \times_{\mathcal{U}_1} \mathrm{H}\mathcal{U} & \longrightarrow & \mathrm{H}\mathcal{U} \\ \downarrow & & \downarrow \\ \overline{\mathcal{U}}_1 & \longrightarrow & \mathcal{U}_1 \end{array}$$

Since $\mathrm{H}\mathcal{U} \to \mathcal{U}_1$ is given by a cocycle with values in $\mathrm{Sp}(\mathcal{Q}_x^\vee)$, by the results of Section 5, the same holds for $\overline{\mathcal{U}}_1 \times_{\mathcal{U}_1} \mathrm{H}\mathcal{U} \to \overline{\mathcal{U}}_1$, and we may construct its associated C_{n-r}-bundle, $\overline{\mathrm{H}\mathcal{U}} \to \overline{\mathcal{U}}_1$. Then the composition

$$\overline{q} : \overline{\mathrm{H}\mathcal{U}} \longrightarrow \overline{\mathcal{U}}_1 \longrightarrow X$$

is an $(\mathrm{A}_{r-1} \sqcup \mathrm{C}_{n-r})$-bundle over X. From this point on, the proof goes on verbatim.

Reference

1. Höring, A., Novelli, C.: Mori contractions of maximal length. Publ. Res. Inst. Math. Sci. **49**(1), 215–228 (2013)