ERRATUM TO REMARK 11.1 OF "FUKAYA CATEGORIES AND PICARD-LEFSCHETZ THEORY"

PAUL SEIDEL

ABSTRACT. We note an error in [1, Remark 11.1], pointed out by Zinger (who I would like to thank). This subject is discussed thoroughly in [2], but we provide a short summary here which focuses on the effect on [1].

The alternative sign convention suggested in [1, Remark 11.1] is incorrect, which means that it does not yield a topology on the determinant line bundle, as pointed out in [2, Remark 3.1]. In the general framework of [2], the intention of the Remark was to take the determinant line bundle as previously constructed in [1, Section 11a], and to pull back its topology by applying the discontinuous automorphism $(-1)^{\delta(\delta-1)/2}$, where δ is the dimension of the cokernel of the Fredholm operator D. Applying these automrophisms changes the original isomorphism [1, Equation (11.2)] by

$$(-1)^{\delta_1(\delta_1-2)/2+\delta_2(\delta_2-1)/2+(\delta_1+\delta_2)(\delta_1+\delta_2-1)/2} = (-1)^{\delta_1\delta_2},$$

which yields

$$\Big(\bigwedge_i w_{1,i}^\vee \wedge \bigwedge_i v_{1,i}\Big) \otimes \Big(\bigwedge_i w_{2,i}^\vee \wedge \bigwedge_i v_{2,i}\Big) \longmapsto$$
$$(-1)^{\delta_2 \operatorname{index}(D_1)}\Big(\bigwedge_i w_{1,i}^\vee \wedge \bigwedge_i w_{2,i}^\vee\Big) \otimes \Big(\bigwedge_i v_{1,i} \wedge \bigwedge_i v_{2,i}\Big)$$

(retaining the sign, which corrects the wrong expression in [1, Remark 11.1]). Similarly, [1, Equation (11.3)] acquires a sign $(-1)^{n(n-1)/2+(n-k)(n-k-1)/2}$, which corresponds to reversing the order of the $f_i^\vee$ (as stated correctly in [1, Remark 11.1]).

REFERENCES

[1] P. Seidel. *Fukaya categories and Picard-Lefschetz theory.* European Math. Soc., 2008.
[2] A. Zinger. The determinant line bundle for Fredholm operators: Construction, properties, and classification. arXiv:1304.6368, 2013.