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A CORRECTION TO "BASES OF THE CONTACT-ORDER FILTRATION OF DERIVATIONS OF COXETER ARRANGEMENTS"

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Lemma 2.1 in this paper, published in *Proc. Amer. Math. Soc.* **133** (2005), 2029–2034, is not correct as it was stated. The correct statement and its proof are as follows.

Lemma 2.1. *For $k \geq 1$ and $\xi \in \{\xi_1^{(1)}, \dots \xi_\ell^{(1)}\}$, we have*

$$\nabla_D^k \circ \nabla_\xi - \nabla_\xi \circ \nabla_D^k = k \ \nabla_D^{k-1} \circ \nabla_{[D,\xi]}.$$

Proof. We use an induction on k. When $k = 1$, the lemma asserts

$$\nabla_D \circ \nabla_\xi - \nabla_\xi \circ \nabla_D = \nabla_{[D,\xi]},$$

which is the integrable property of the Levi-Civita connection ∇. Let $k > 1$. We have

$$\begin{aligned} \nabla_D^k \circ \nabla_\xi &= \nabla_D^{k-1} \circ (\nabla_\xi \circ \nabla_D + \nabla_{[D,\xi]}) \\ &= (\nabla_D^{k-1} \circ \nabla_\xi) \circ \nabla_D + \nabla_D^{k-1} \circ \nabla_{[D,\xi]} \\ &= (\nabla_\xi \circ \nabla_D^{k-1} + (k-1)\nabla_D^{k-2} \circ \nabla_{[D,\xi]}) \circ \nabla_D + \nabla_D^{k-1} \circ \nabla_{[D,\xi]} \\ &= \nabla_\xi \circ \nabla_D^k + (k-1)\nabla_D^{k-2} \circ \nabla_{[D,\xi]} \circ \nabla_D + \nabla_D^{k-1} \circ \nabla_{[D,\xi]} \end{aligned}$$

by using the induction assumption. Let $1 \leq i \leq \ell$. Since $\deg \xi(P_i) < 2(\deg P_\ell)$, we have

$$[D,[D,\xi]](P_i) = D^2(\xi(P_i)) = 0$$

and $[D,[D,\xi]] = 0$. So we obtain

$$\nabla_D \circ \nabla_{[D,\xi]} = \nabla_{[D,\xi]} \circ \nabla_D.$$

This implies

$$\nabla_D^k \circ \nabla_\xi = \nabla_\xi \circ \nabla_D^k + k \ \nabla_D^{k-1} \circ \nabla_{[D,\xi]}.$$

□

The theorems in the paper and their proofs are correct as they are.

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