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# CORRECTION TO "THE GROSS-KOHNEN-ZAGIER THEOREM IN HIGHER DIMENSIONS"

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J. Bruinier pointed out the following gap in the proof of the main theorem of [B2]. The paper defines certain principal Heegner divisors in terms of the divisors of automorphic forms with unitary characters. Unfortunately, if these characters are allowed to have infinite order as in [B2], then there are sometimes "too many" principal divisors (see [F]) and the Heegner-divisor class group collapses.

So the definition of principal Heegner divisors in [B2] should include the condition that the unitary character of these automorphic forms must have *finite* order. But then we have to show that the infinite-product automorphic forms used in the proof have this property. This can be shown as follows.

For $O_{2,n}(\mathbf{R})$ with $n > 2$ this follows because these Lie groups have no almost simple factors of real rank 1, and if $G$ is a lattice in a connected Lie group with no simple factors of rank 1, then the abelianization of $G$ is finite (see [M, Proposition 6.19, p. 333]). So any character of $G$ has finite order.

For the cases $n = 1$ and $n = 2$ we use the embedding trick (see [B1, Lemma 8.1]) to see that if $f$ is an infinite product of $O_{2,n}(\mathbf{R})$, then $f$ is the restriction of an infinite product $g$ of $O_{2,24+n}(\mathbf{R})$. The infinite product $g$ is not necessarily single valued; however, a look at the proof of [B1, Lemma 8.1] shows that if $f$ is constructed from a vector-valued modular form with integral coefficients, then $g^{24}$ has zeros and poles of integral order and is therefore a meromorphic automorphic form for some unitary character. By the previous paragraph this character has finite order, and therefore so does the character of $f$.

Another minor correction is that [B2, Theorem 3.1] should have the condition of $\rho = \sigma_k$ on $\Gamma \cap K$ added to it.

## References

[B1] Richard E. Borcherds, *Automorphic forms with singularities on Grassmannians*, Invent. Math. **132** (1998), 491–562.

[B2] ———, *The Gross-Kohnen-Zagier theorem in higher dimensions*, Duke Math. J. **97** (1999), 219–233.

[F] John D. Fay, *Fourier coefficients of the resolvent for a Fuchsian group*, J. Reine Angew. Math. **293**/**294** (1977), 143–203.

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