UPDATE ON: SINGULARITIES OF DIVISORS OF LOW DEGREE ON ABELIAN VARIETIES

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The following result is [DH07, Theorem 7] (we work over the complex numbers).

Theorem 1. *Let (A, ℓ) be a simple polarized abelian variety of degree d and dimension $g > (d+1)^2/4$ and let $D \sim m\ell$.*

- *if $m = 1$, the divisor D is prime and the pair (A, D) is canonical;*
- *if $m \geq 2$, the pair $(A, \frac{1}{m}D)$ is log terminal unless $D = mE$, with $E \in \ell$.*

It was recently improved by Pareschi in [P21], who lowered the lower bound on the dimension (as predicted in [DH07] after the statement of Theorem 7).

Theorem 2 (Pareschi)**.** *Let (A, ℓ) be a simple polarized abelian variety of degree d and dimension $g > d$ and let $D \sim m\ell$.*

- *if $m = 1$, the divisor D is prime and the pair (A, D) is canonical;*
- *if $m \geq 2$, the pair $(A, \frac{1}{m}D)$ is log terminal unless $D = mE$, with $E \in \ell$.*

References

[DH07] Debarre, O., Hacon, C., Singularities of divisors of low degree on abelian varieties, *Manuscripta Math.* **122** (2007), 217–228.

[P21] Pareschi, G., Singularities of divisors of low degree on simple abelian varieties, *Int. Math. Res. Not. IMRN* (2021), 16726–16735.