

## COHOMOLOGICAL STABILIZATION OF TOROIDAL COMPACTIFICATIONS OF $\mathcal{A}_g$

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Principally polarized abelian varieties of dimension  $g$  are basic objects in algebraic geometry, but the cohomology of their moduli space  $\mathcal{A}_g$  is largely unknown. However, by a classical result of Borel, the cohomology of  $\mathcal{A}_g$  in degree  $k < g$  is known explicitly and is freely generated by the odd Chern classes of the Hodge bundle. Work of Charney and Lee provides an analogous result for the stable cohomology of the minimal compactification of  $\mathcal{A}_g$ , the Satake compactification.

For most geometric applications, it is more natural to consider toroidal compactifications of  $\mathcal{A}_g$  instead. In this talk, we deal with the case of the perfect cone compactification and the matroidal partial compactification, prove some stability results for their cohomology and discuss the structure of the stable cohomology groups that arise in this way.

This is joint work with S. Grushevsky (Stony Brook) and K. Hulek (Hannover).