

1164-14-178

Madeline Brandt, Juliette Bruce, Melody Chan, Margarida Melo, Gwyeneth Moreland and Corey Wolfe* (cwolfe@tulane.edu). *On the top-weight rational cohomology of \mathcal{A}_g .*

We compute the top-weight rational cohomology of \mathcal{A}_g for $g = 5, 6$, and 7 , and we give some vanishing results for the top-weight rational cohomology of $\mathcal{A}_8, \mathcal{A}_9$, and \mathcal{A}_{10} . When $g = 5$ and $g = 7$, we exhibit nonzero cohomology groups of \mathcal{A}_g in odd degree, thus answering a question highlighted by Grushevsky. Our methods develop the relationship between the top-weight cohomology of \mathcal{A}_g and the homology of the link of the moduli space of principally polarized tropical abelian varieties of rank g . To compute the latter we use the Voronoi complexes used by Elbaz-Vincent-Gangl-Soulé. Our computations give natural candidates for compactly supported cohomology classes of \mathcal{A}_g in weight 0 that produce the stable cohomology classes of the Satake compactification of \mathcal{A}_g in weight 0, under the Gysin spectral sequence for the latter space. (Received January 18, 2021)