

E–Polynomials of Character Varieties of Kähler Groups

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The point counting techniques developed by Hausel and Rodríguez-Villegas [2] for character varieties of fundamental groups of compact Riemann surfaces on the basis of Frobenius’s work has been extended to the character varieties of the one relator Kähler groups by Benyoussef [1]. Our main objective is to extend those computations to general Kähler groups, using Gordon and Rodríguez-Villegas [3] description. Keywords: E-Polynomials, Hodge Bundles, Hodge Polynomials, Hodge Theory, Vector Bundles.

References

- [1] Benyoussef, M. Character Varieties for Seifert Groups and Higgs Bundles over Orb- ifolds, Ph.D. thesis, Freie Universität, Berlin, 2024.
- [2] Hausel, T. and Rodríguez-Villegas, F. Mixed Hodge polynomials with character va- rieties, with an appendix by Nicholas M. Katz, Invent. Math. 174 (2008), no. 3, 555-624.
- [3] Gordon, C. and Rodríguez-Villegas, F. On the divisibility of $\#\mathrm{Hom}(\Gamma, G)$ by $|G|$, J. Algebra 350 (2012), 300-307

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