Contribution ID: **2** Type: **not specified**

The rational abelianization of the Chillingworth subgroup of the mapping class group of a surface

Monday 18 September 2023 10:20 (30 minutes)

The Chillingworth subgroup of the mapping class group of a compact oriented connected surface of genus g with one boundary component is defined as the subgroup of the mapping class group of the surface, whose elements preserve nonsingular vector fields on the surface up to homotopy. We determined the rational abelianization of the Chillingworth subgroup as a full mapping class group module. The rational abelianization is given by the first Johnson homomorphism and the Casson-Morita homomorphism for the Chillingworth subgroup. (This talk is based on arXiv:2305.11767.)

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