Relative homological representations of framed mapping class groups. (English) Zbl 07367029
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Summary: Let \( \Sigma \) be a surface with either boundary or marked points, equipped with an arbitrary framing. In this note we determine the action of the associated ‘framed mapping class group’ on the homology of \( \Sigma \) relative to its boundary (respectively, marked points), describing the image as the kernel of a certain crossed homomorphism related to classical spin structures. Applying recent work of the authors, we use this to describe the monodromy action of the orbifold fundamental group of a stratum of abelian differentials on the relative periods.

MSC:

- 20F38 Other groups related to topology or analysis
- 30F30 Differentials on Riemann surfaces
- 57R25 Vector fields, frame fields in differential topology

Full Text: DOI arXiv