

D. Alfaya Sánchez

Abstract-

The Grothendieck ring of Chow motives admits two natural opposite λ -ring structures, one of which is a special structure allowing the definition of Adams operations on the ring. In this work I present algorithms which allow an effective simplification of expressions that involve both λ -ring structures, as well as Adams operations. In particular, these algorithms allow the symbolic simplification of algebraic expressions in the sub- λ -ring of motives generated by a finite set of curves into polynomial expressions in a small set of motivic generators. As a consequence, the explicit computation of motives of some moduli spaces is performed, allowing the computational verification of some conjectural formulas for these spaces.

Index Terms- Lambda-rings; Symbolic computations of motives; Chow motives; Moduli spaces; Higgs bundles moduli space

Due to copyright restriction we cannot distribute this content on the web. However, clicking on the next link, authors will be able to distribute to you the full version of the paper:

[Request full paper to the authors](#)

If your institution has an electronic subscription to Applicable Algebra in Engineering, Communication and Computing, you can download the paper from the journal website:

[Access to the Journal website](#)

Citation: