

On the Friedlander-Milnor conjecture for groups of small rank

Fabien Morel

CONTENTS

0. Introduction	46
1. The \mathbb{A}^1 -local space $BSing_{\bullet}^{\mathbb{A}^1}(G)$	55
1.1. The Suslin-Voevodsky construction	55
1.2. The \mathbb{A}^1 -local space $Sing_{\bullet}^{\mathbb{A}^1}(G)$ and its classifying space	56
2. The Friedlander conjecture and the rigidity property	57
2.1. The rigidity properties at ℓ	57
2.2. Reformulation of the rigidity property in term of simplicial chain complex	60
3. The rigidity property and the \mathbb{A}^1 -chain complex	64
3.1. \mathbb{A}^1 -chain complexes and the \mathbb{A}^1 -lower central series	64
3.2. \mathbb{A}^1 -homological characterization of the rigidity property	68
4. Reduction to the rigidity property for the $C_*^{\mathbb{A}^1}((\mathbb{G}_m)^{\wedge n})$'s	71
4.1. \mathbb{A}^1 -chain complex of mixed Tate type	71
4.2. Bruhat decomposition and \mathbb{A}^1 -chain complex of G	73
5. The rigidity property for the $C_*^{\mathbb{A}^1}((\mathbb{G}_m)^{\wedge n})$'s	76
5.1. The Transfers morphisms on the \mathbb{A}^1 -localization of the $\mathbb{Z}(\mathbb{G}_m^{\wedge n})$'s	76
5.2. Transfers structures on the $H_*^{\mathbb{A}^1}((\mathbb{G}_m)^n)$'s and rigidity	82
A \mathbb{A}^1 -coverings and Friedlander conjecture in degree 2	86
A.1. \mathbb{A}^1 -coverings and central extensions of algebraic groups	87
A.2. Proof of the Friedlander conjecture in degree 2	89
References	91