

CONTENTS

0. Introduction	1
0.1. The conjecture	1
0.2. The results	3
0.3. Some further questions	5
0.4. Notations	6
1. Preliminaries on 1-motives	9
1.1. Deligne's definition	9
1.2. Hodge realization	10
1.3. ℓ -adic and étale realization	11
1.4. De Rham realization	13
1.5. Cartier duals	14
2. Homological Picard 1-motive: Pic^-	19
2.1. Relative Picard functor	19
2.2. Definition of Pic^-	21
2.3. Independence of resolutions and compactifications	22
2.4. Hodge realization of Pic^-	23
2.5. Étale realization of Pic^-	33
2.6. De Rham realization of Pic^-	35
3. Cohomological Albanese 1-motive: Alb^+	45
3.1. Definition of Alb^+	45
3.2. Albanese mappings to Alb^+	50
3.3. Hodge, étale and De Rham realizations of Alb^+	51
4. Cohomological Picard 1-motive: Pic^+	53
4.1. Simplicial Picard functor	53
4.2. Definition of Pic^+	55
4.3. Hodge realization of Pic^+	56
4.4. Étale realization of Pic^+	58
4.5. De Rham realization of Pic^+	61

5. Homological Albanese 1-motive: Alb^-	67
5.1. Definition of Alb^-	67
5.2. Albanese mappings to Alb^-	70
5.3. Hodge, étale and De Rham realizations of Alb^-	71
6. Motivic Abel-Jacobi and Gysin maps	73
6.1. Semi-normalization	73
6.2. Functoriality	74
6.3. Projective bundles and vector bundles	79
6.4. Universality and zero-cycles	80
6.5. Gysin maps	84
7. Rationality Questions	87
7.1. 1-motives over non-closed fields	87
7.2. Albanese and Picard 1-motives in zero characteristic	88
7.3. Albanese mappings	90
Appendix. Picard functors	91
A.1. Axioms	91
A.2. Representability of the relative Picard functor	95
A.3. Representability of the simplicial Picard functor	96
Bibliography	101