

## TABLE DES MATIÈRES

MICHEL DEMAZURE — <i>La règle des signes de Tits</i> .....	1
1. Introduction .....	1
2. Groupes de rang un .....	2
3. Groupes de rang 2 : calcul de crochets .....	5
4. Le groupe de Weyl étendu .....	9
Références .....	13
 BAS EDIXHOVEN & MATTHIEU ROMAGNY — <i>Group schemes out of birational group laws, Néron models</i> .....	 15
1. Introduction .....	15
2. A case treated by André Weil .....	17
3. The case treated by Michael Artin in SGA3 .....	21
4. Application to Néron models .....	30
5. Néron's smoothening process .....	31
6. From weak Néron models to Néron models .....	33
References .....	37
 PHILIPPE GILLE — <i>Sur la classification des schémas en groupes semi-simples</i> .....	 39
1. Introduction .....	39
2. Préliminaires .....	42
3. Sous-groupes paraboliques .....	57
4. La décomposition de Witt-Tits .....	73
5. Le cas du schéma en groupes des automorphismes d'un schéma de Chevalley .....	79
6. Sous-schémas paraboliques des données radicielles tordues .....	83
7. Isotropie et irréductibilité .....	90
8. Invariants cohomologiques des groupes semi-simples .....	95
9. Appendice : cohomologie des groupes à valeurs dans des groupes de Weyl .....	99
Références .....	108
 WILBERD VAN DER KALLEN — <i>Good Grosshans filtration in a family</i> .....	 111
1. Introduction .....	111
2. Recollections and conventions .....	113

3. Gradings . . . . .	115
4. Picard graded Cox rings . . . . .	116
5. Coherent sheaves . . . . .	117
6. Resolution of the diagonal . . . . .	119
7. Differently graded Cox rings . . . . .	122
8. Variations on the Grosshans grading . . . . .	122
9. Proof of the main result . . . . .	124
10. Consequences for earlier work . . . . .	126
Reductive group schemes over a Noetherian base ring. . . . .	127
References . . . . .	128
TING-YU LEE — <i>Adjoint quotients of reductive groups</i> . . . . .	131
1. Introduction . . . . .	131
2. Notations and Definitions . . . . .	132
3. The adjoint quotient over $\mathbb{Z}$ . . . . .	133
4. Stability under base change . . . . .	137
5. Generalized Steinberg's cross-section . . . . .	139
References . . . . .	144
SIMON PEPIN LEHALLEUR — <i>Subgroups of maximal rank of reductive groups</i> .	147
Introduction . . . . .	147
1. Lie algebras of subgroups of maximal rank . . . . .	150
2. Root systems and $p$ -closed subsets . . . . .	151
3. Construction of subgroups of maximal rank from Lie algebras . . . . .	156
4. Reduction to semi-simple absolutely simple simply connected groups . . . .	160
5. Very special isogenies in characteristics 2 and 3 and exceptional $p$ -closed sets . . . . .	161
6. The Borel-De Siebenthal algorithm in positive characteristic . . . . .	164
A. Extended Dynkin diagrams . . . . .	462
References . . . . .	171
JILONG TONG — <i>Unipotent groups over a discrete valuation ring (after     Dolgachev-Weisfeiler)</i> . . . . .	173
Introduction . . . . .	173
1. Notations and reviews . . . . .	174
2. Generators of the $R$ -algebra $R[G]$ . . . . .	181
3. Geometry of unipotent groups . . . . .	205
4. Some explicit models of two dimensional unipotent groups . . . . .	216
References . . . . .	224
JIU-KANG YU — <i>Smooth models associated to concave functions in Bruhat-Tits     theory</i> . . . . .	227
0. Introduction . . . . .	227

1. Notations .....	230
2. Modifying integral models .....	232
3. Smooth models for parahoric subgroups .....	235
4. Admissible filtrations on tori .....	238
5. The minimal congruent filtrations of tori .....	242
6. Good filtrations of tori .....	244
7. Lemmas .....	245
8. Smooth models associated to concave functions .....	249
9. Comments and additional results .....	252
10. The compact groups in the construction of tame types .....	254
References .....	257