

Contents

Introduction	1
1 Preliminaries	7
1.1 Isotropic vector bundles	7
1.2 Witt groups	8
1.2.1 Witt groups of exact categories	8
1.2.2 Triangular Witt groups: Derived Witt groups of schemes.	11
1.2.3 Coherent Witt groups	14
1.2.4 Pull-backs, push-forwards, base change	14
1.2.5 Witt groups with support	16
1.2.6 Localization	17
1.2.7 Projective bundles	18
1.2.8 The Balmer-Calmès setup	19
1.2.9 Lax-similtude	21
1.2.10 Total bases	22
1.3 Functors of points	25
1.4 Grassmann and flag bundles	27
1.5 Schubert calculus	36
1.5.1 Homogeneous spaces	36
1.5.2 Schubert varieties	39
1.5.3 Shifted, even and almost even Young diagrams	40
1.5.4 Young diagrams parametrize Schubert varieties	47
1.5.5 Quivers of minuscule and cominuscule varieties	49
2 Witt groups of maximal orthogonal Grassmannian bundles	57
2.1 Resolutions of degeneracy loci	57
2.2 Construction of the basis	60
2.3 The blow-up setting	64
2.4 Main Theorem	73

3	Witt groups of Lagrangian Grassmann bundles.	77
3.1	The extended blow-up setting	78
3.2	The connecting homomorphism revisited	81
3.3	The connecting homomorphism for $\mathrm{LG}(2m+1)$	86
3.4	Construction of a basis - an approach	94
4	Conclusions and examples	101
4.1	Combinatorics on shifted Young diagrams	101
4.2	Reformulation for the maximal orthogonal case	104
4.3	Reformulation for the Lagrangian case	106
4.4	Enumerative results	108
4.5	Summary and perspectives	116
	Bibliography	119