Eine Woche, ein Beispiel

10.2 equivariant K-theory of Steinberg variety : notation

This document is written to reorganize the notations in Tomasz Przezdziecki's master thesis:
http://www.math.uni-bonn.de/ag/stroppel/Master%27s%20Thesis_Tomasz%20Przezdziecki.pdf

We changed some notation for the convenience of writing.

Task.

1. dimension vector
2. Weyl gp
3. alg group & Lie algebra
4. typical variety
5. equivariant stratifications
6. tangent space, Euler class
7. basis of Hecke alg

We may use two examples for the convenience of presentation.
Readers can easily distinguish them by the dim vectors.

1. dimension vector

$|d| = 5$

$d = (3,2)$

$\underline{d} = \begin{pmatrix}3,2\\2,2\\2,1\\1,1\\0,0\\0,0\end{pmatrix} =$  $=$  $=$  $\in W_d \backslash \mathbb{W}_d$ or $Min(\mathbb{W}_{|d|}, W_d)$

Young Tableax $r_\varpi = \pi_{\underline{d}}^{-1}(F_\varpi)$

2. Weyl group

Set	element	special element	others
$\mathbb{W}_{\lvert d\rvert} = S_5$	ϖ	$\varpi_{max} =$ 	$\Pi = \{s_1, s_2, s_3, s_4\}$
$W_d = S_3 \times S_2$	w	$w_{max} =$ 	$\Pi_d = \{s_1, s_2, s_4\}$
$W_d \backslash \mathbb{W}_{\lvert d\rvert} = S_3 \times S_2 \backslash S_5$	$\varpi, \underline{d}$		($Comp_d$)
$Min(\mathbb{W}_{\lvert d\rvert}, W_d) = \{$  $, \cdots \}$	u		(Shuffled)

$d = (1,2)$ $\qquad$ $a \longrightarrow b$

$\langle v_1 \rangle \longrightarrow \langle v_2, v_3 \rangle$

⚠ The action on Flag is not the same as in http://www.math.uni-bonn.de/ag/stroppel/Master%27s%20Thesis_Tomasz%20Przezdziecki.pdf

$\varpi = wu$				w	$\underline{d} = u$	order of basis	$l(\varpi)$	$l(w)$	$\mathbb{B}_\varpi$	B_ϖ	$\varpi B \varpi^{-1}$
Id	Id	$\begin{pmatrix}1&2&3\\1&2&3\end{pmatrix}$	$\begin{bmatrix}1&&\\&1&\\&&1\end{bmatrix}$		abb	$\{v_1, v_2, v_3\}$	0	0	$\begin{bmatrix}*&*&*\\&*&*\\&&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&*\\&&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&*\\&&*\end{bmatrix}$
t	(23)	$\begin{pmatrix}1&2&3\\1&3&2\end{pmatrix}$	$\begin{bmatrix}1&&\\&&1\\&1&\end{bmatrix}$		abb	$\{v_1, v_3, v_2\}$	1	1	$\begin{bmatrix}*&*&*\\&*&\\&*&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&\\&*&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&\\&*&*\end{bmatrix}$
s	(12)	$\begin{pmatrix}1&2&3\\2&1&3\end{pmatrix}$	$\begin{bmatrix}&1&\\1&&\\&&1\end{bmatrix}$		bab	$\{v_2, v_1, v_3\}$	1	0	$\begin{bmatrix}*&&*\\*&*&*\\&&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&*\\&&*\end{bmatrix}$	$\begin{bmatrix}*&&*\\&*&\\&&*\end{bmatrix}$
ts	(132)	$\begin{pmatrix}1&2&3\\3&1&2\end{pmatrix}$	$\begin{bmatrix}&1&\\&&1\\1&&\end{bmatrix}$		bab	$\{v_3, v_1, v_2\}$	2	1	$\begin{bmatrix}*&*&\\&*&\\*&*&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&\\&*&*\end{bmatrix}$	$\begin{bmatrix}*&*&\\&*&\\&&*\end{bmatrix}$
st	(123)	$\begin{pmatrix}1&2&3\\2&3&1\end{pmatrix}$	$\begin{bmatrix}&&1\\1&&\\&1&\end{bmatrix}$		bba	$\{v_2, v_3, v_1\}$	2	0	$\begin{bmatrix}*&&\\*&*&*\\*&&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&*\\&&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&\\*&&*\end{bmatrix}$
sts	(13)	$\begin{pmatrix}1&2&3\\3&2&1\end{pmatrix}$	$\begin{bmatrix}&&1\\&1&\\1&&\end{bmatrix}$		bba	$\{v_3, v_2, v_1\}$	3	1	$\begin{bmatrix}*&&\\*&*&\\*&*&*\end{bmatrix}$	$\begin{bmatrix}*&&\\&*&\\&*&*\end{bmatrix}$	$\begin{bmatrix}*&&\\*&*&\\&&*\end{bmatrix}$