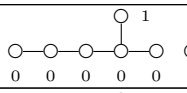
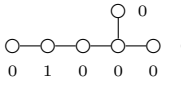
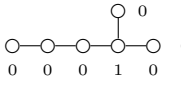
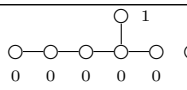
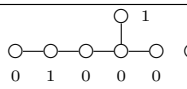
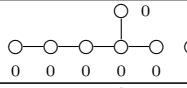
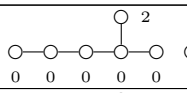
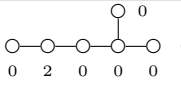
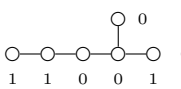
PREHOMOGENEOUS SPACES ASSOCIATED WITH NILPOTENT ORBITS IN TYPE EVI

STEVEN GLENN JACKSON AND ALFRED G. NOËL

Nilpotent orbits in type EVI

Orbit	$K_{\mathbb{C}}$ diagram	i	$\dim \mathfrak{g}_{\mathbb{C}}^i \cap \mathfrak{k}_{\mathbb{C}}$	Highest weights of $\mathfrak{g}_{\mathbb{C}}^i \cap \mathfrak{k}_{\mathbb{C}}$
1.		1	16	$(0,1,0,0,0,0,0)$ $(0,0,0,0,0,0,2)$
2.		1	16	$(1,-1,1,0,0,0,0)$
		2	2	$(0,1,0,0,0,0,0)$ $(0,0,0,0,0,0,2)$
3.		1	16	$(1,0,0,-1,1,1,0)$
		2	6	$(0,1,0,0,0,0,0)$
4.		1	15	$(0,1,0,0,0,0,0)$
		3	1	$(0,0,0,0,0,0,2)$
5.		1	15	$(0,-1,0,1,0,0,0)$ $(1,0,0,0,-1,1,0)$ $(0,0,0,0,0,0,2)$
		2	8	$(1,-1,1,0,0,0,0)$
		3	1	$(0,1,0,0,0,0,0)$
6.		4	1	$(0,0,0,0,0,0,2)$
7.		2	16	$(0,1,0,0,0,0,0)$ $(0,0,0,0,0,0,2)$
8.		2	16	$(1,-1,1,0,0,0,0)$
		4	1	$(0,1,0,0,0,0,0)$
9.		1	12	$(2,-1,0,0,0,0,0)$ $(-1,1,0,0,1,-1,0)$ $(0,-1,0,1,0,0,0)$ $(0,0,0,0,0,0,2)$
		2	8	$(1,0,0,0,1,-1,0)$ $(-1,0,1,0,0,0,0)$

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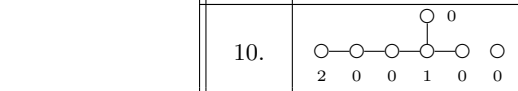
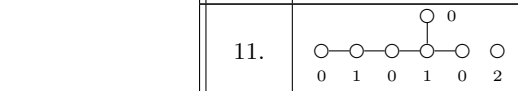
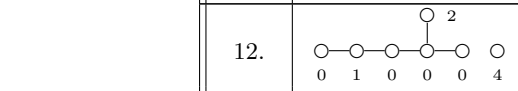
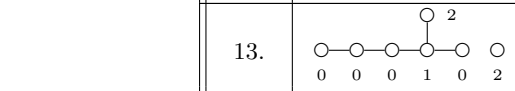
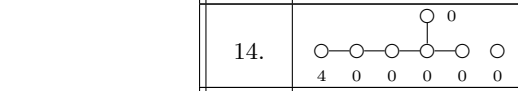
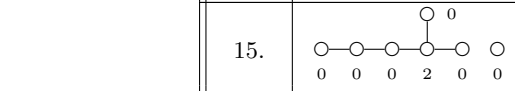
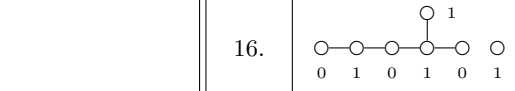
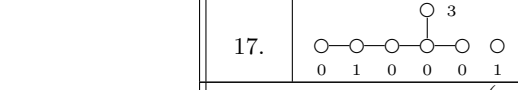
Key words and phrases. Lie group, nilpotent orbit, prehomogeneous space.

Nilpotent orbits in type EVI (continued)

Orbit	$K_{\mathbb{C}}$ diagram	i	$\dim \mathfrak{g}^i_{\mathbb{C}} \cap \mathfrak{k}_{\mathbb{C}}$	Highest weights of $\mathfrak{g}^i_{\mathbb{C}} \cap \mathfrak{k}_{\mathbb{C}}$
		3	4	$(1,-1,1,0,0,0,0)$
		4	1	$(0,1,0,0,0,0,0)$
10.		1	12	$(-1,1,0,-1,1,1,0)$
		2	6	$(1,0,1,-1,0,0,0)$ $(-1,0,1,0,0,0,0)$
		3	4	$(1,0,0,-1,1,1,0)$
		4	3	$(0,1,0,0,0,0,0)$
11.		1	12	$(1,0,1,-1,0,0,0)$ $(0,-1,1,-1,1,1,0)$
		2	10	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$ $(0,0,0,0,0,0,2)$
		3	4	$(1,-1,1,0,0,0,0)$
		4	1	$(0,1,0,0,0,0,0)$
12.		1	8	$(1,0,0,0,-1,1,0)$
		2	6	$(0,-1,0,1,0,0,0)$
		3	8	$(1,-1,1,0,0,0,0)$
		4	2	$(0,1,0,0,0,0,0)$ $(0,0,0,0,0,0,2)$
13.		1	8	$(1,0,0,0,-1,1,0)$
		2	2	$(0,0,0,-1,2,0,0)$ $(0,0,0,0,0,0,2)$
		3	8	$(1,0,0,-1,1,1,0)$
		4	6	$(0,1,0,0,0,0,0)$
14.		4	10	$(0,1,0,0,0,0,0)$
15.		2	16	$(1,0,0,-1,1,1,0)$
		4	6	$(0,1,0,0,0,0,0)$
16.		1	10	$(0,0,0,-1,2,0,0)$ $(0,-1,1,0,-1,1,0)$ $(1,0,1,-1,0,0,0)$ $(0,0,0,0,0,0,2)$
		2	8	$(0,-1,1,-1,1,1,0)$ $(1,0,0,0,-1,1,0)$
		3	5	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$
		4	4	$(1,-1,1,0,0,0,0)$
		5	1	$(0,1,0,0,0,0,0)$
17.		1	9	$(1,0,0,0,-1,1,0)$ $(0,0,0,0,0,0,2)$

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Nilpotent orbits in type EVI (continued)				
Orbit	$K_{\mathbb{C}}$ diagram	i	$\dim \mathfrak{g}_{\mathbb{C}}^i \cap \mathfrak{k}_{\mathbb{C}}$	Highest weights of $\mathfrak{g}_{\mathbb{C}}^i \cap \mathfrak{k}_{\mathbb{C}}$
		3	6	$(0,-1,0,1,0,0,0)$
		4	8	$(1,-1,1,0,0,0,0)$
		5	1	$(0,1,0,0,0,0,0)$
18.		1	9	$(0,0,0,-1,2,0,0)$ $(0,-1,1,0,-1,1,0)$ $(1,0,1,-1,0,0,0)$
		2	8	$(0,-1,1,-1,1,1,0)$ $(1,0,0,0,-1,1,0)$
		3	6	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$ $(0,0,0,0,0,0,2)$
		4	4	$(1,-1,1,0,0,0,0)$
		5	1	$(0,1,0,0,0,0,0)$
19.		4	15	$(0,1,0,0,0,0,0)$
20.		2	16	$(1,0,0,-1,1,1,0)$
		4	7	$(0,1,0,0,0,0,0)$ $(0,0,0,0,0,0,2)$
21.		2	15	$(0,-1,0,1,0,0,0)$ $(1,0,0,0,-1,1,0)$ $(0,0,0,0,0,0,2)$
		4	8	$(1,-1,1,0,0,0,0)$
		6	1	$(0,1,0,0,0,0,0)$
22.		4	15	$(0,1,0,0,0,0,0)$
		8	1	$(0,0,0,0,0,0,2)$
23.		2	8	$(1,0,0,0,-1,1,0)$
		4	7	$(0,-1,0,1,0,0,0)$ $(0,0,0,0,0,0,2)$
		6	8	$(1,-1,1,0,0,0,0)$
		8	1	$(0,1,0,0,0,0,0)$
24.		1	8	$(0,0,-1,1,-1,1,0)$ $(0,0,-1,1,1,-1,0)$ $(-1,1,0,1,-1,-1,0)$
		2	8	$(1,1,-1,0,0,0,0)$ $(0,0,-1,0,1,1,0)$ $(-1,1,0,0,-1,1,0)$ $(-1,1,0,0,1,-1,0)$ $(0,0,0,0,0,0,2)$
		3	6	$(1,0,0,1,-1,-1,0)$ $(-1,1,-1,1,0,0,0)$
		4	3	$(1,0,0,0,-1,1,0)$ $(1,0,0,0,1,-1,0)$ $(-1,0,1,0,0,0,0)$

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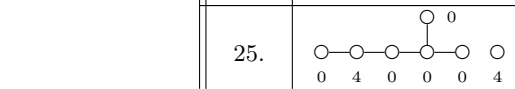
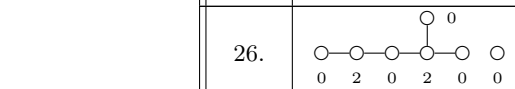
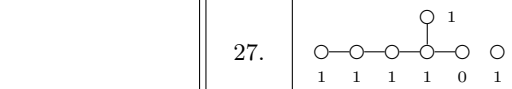
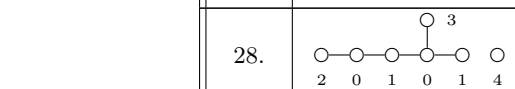
Nilpotent orbits in type EVI (continued)

Orbit	$K_{\mathbb{C}}$ diagram	i	$\dim \mathfrak{g}^i_{\mathbb{C}} \cap \mathfrak{k}_{\mathbb{C}}$	Highest weights of $\mathfrak{g}^i_{\mathbb{C}} \cap \mathfrak{k}_{\mathbb{C}}$
		5	2	$(1,0,-1,1,0,0,0)$
		6	2	$(0,1,0,0,0,0,0)$
25.		4	17	$(1,-1,1,0,0,0,0)$ $(0,0,0,0,0,0,2)$
		8	1	$(0,1,0,0,0,0,0)$
26.		2	12	$(1,0,1,-1,0,0,0)$ $(0,-1,1,-1,1,1,0)$
		4	9	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$
		6	4	$(1,-1,1,0,0,0,0)$
		8	1	$(0,1,0,0,0,0,0)$
27.		1	7	$(0,0,0,-1,2,0,0)$ $(0,-1,2,-1,0,0,0)$ $(-1,2,-1,0,0,0,0)$ $(2,-1,0,0,0,0,0)$ $(0,0,-1,1,-1,1,0)$ $(0,0,0,0,0,0,2)$
		2	6	$(-1,1,1,-1,0,0,0)$ $(1,1,-1,0,0,0,0)$ $(0,0,-1,0,1,1,0)$ $(0,-1,1,0,-1,1,0)$
		3	5	$(1,0,1,-1,0,0,0)$ $(0,-1,1,-1,1,1,0)$ $(-1,1,0,0,-1,1,0)$
		4	5	$(0,-1,0,1,0,0,0)$ $(-1,1,0,-1,1,1,0)$ $(1,0,0,0,-1,1,0)$
		5	3	$(-1,1,-1,1,0,0,0)$ $(1,0,0,-1,1,1,0)$
		6	2	$(-1,0,1,0,0,0,0)$ $(1,0,-1,1,0,0,0)$
		7	1	$(1,-1,1,0,0,0,0)$
		8	1	$(0,1,0,0,0,0,0)$
28.		1	6	$(0,0,-1,1,-1,1,0)$ $(-1,1,0,1,-1,-1,0)$
		2	4	$(1,1,-1,0,0,0,0)$ $(-1,1,0,0,-1,1,0)$
		3	4	$(0,0,-1,1,1,-1,0)$ $(1,0,0,1,-1,-1,0)$
		4	5	$(0,0,-1,0,1,1,0)$ $(-1,1,0,0,1,-1,0)$ $(1,0,0,0,-1,1,0)$ $(0,0,0,0,0,0,2)$
		5	4	$(-1,1,-1,1,0,0,0)$
		6	2	$(1,0,0,0,1,-1,0)$ $(-1,0,1,0,0,0,0)$
		7	2	$(1,0,-1,1,0,0,0)$

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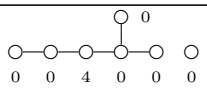
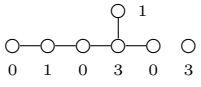
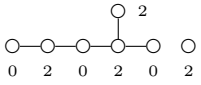
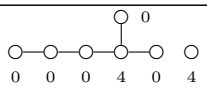
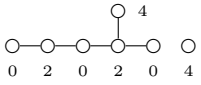
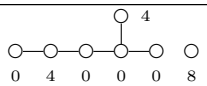
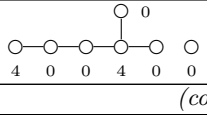
Nilpotent orbits in type EVI (continued)				
Orbit	$K_{\mathbb{C}}$ diagram	i	$\dim \mathfrak{g}^i_{\mathbb{C}} \cap \mathfrak{k}_{\mathbb{C}}$	Highest weights of $\mathfrak{g}^i_{\mathbb{C}} \cap \mathfrak{k}_{\mathbb{C}}$
		8	2	$(0,1,0,0,0,0,0)$
29.		4	18	$(1,0,-1,1,0,0,0)$
		8	3	$(0,1,0,0,0,0,0)$
30.		1	5	$(0,0,0,-1,2,0,0)$ $(1,0,1,-1,0,0,0)$
		3	5	$(0,-1,1,0,-1,1,0)$ $(0,0,0,0,0,0,2)$
		4	8	$(0,-1,1,-1,1,1,0)$ $(1,0,0,0,-1,1,0)$
		5	4	$(1,0,0,-1,1,1,0)$
		7	1	$(0,-1,0,1,0,0,0)$
		8	4	$(1,-1,1,0,0,0,0)$
		9	1	$(0,1,0,0,0,0,0)$
31.		2	10	$(0,0,0,-1,2,0,0)$ $(0,-1,1,0,-1,1,0)$ $(1,0,1,-1,0,0,0)$ $(0,0,0,0,0,0,2)$
		4	8	$(0,-1,1,-1,1,1,0)$ $(1,0,0,0,-1,1,0)$
		6	5	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$
		8	4	$(1,-1,1,0,0,0,0)$
		10	1	$(0,1,0,0,0,0,0)$
32.		4	17	$(1,0,0,-1,1,1,0)$ $(0,0,0,0,0,0,2)$
		8	6	$(0,1,0,0,0,0,0)$
33.		2	8	$(0,-1,1,0,-1,1,0)$ $(1,0,1,-1,0,0,0)$
		4	6	$(0,0,0,-1,2,0,0)$ $(1,0,0,0,-1,1,0)$ $(0,0,0,0,0,0,2)$
		6	4	$(0,-1,1,-1,1,1,0)$
		8	5	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$
		10	4	$(1,-1,1,0,0,0,0)$
		12	1	$(0,1,0,0,0,0,0)$
34.		4	14	$(0,-1,0,1,0,0,0)$ $(1,0,0,0,-1,1,0)$
		8	9	$(1,-1,1,0,0,0,0)$ $(0,0,0,0,0,0,2)$
		12	1	$(0,1,0,0,0,0,0)$
35.		4	15	$(1,0,1,-1,0,0,0)$ $(-1,1,0,-1,1,1,0)$

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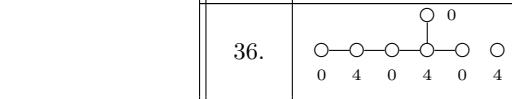
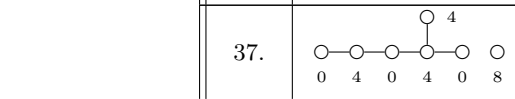
Nilpotent orbits in type EVI (continued)				
Orbit	$K_{\mathbb{C}}$ diagram	i	$\dim \mathfrak{g}_{\mathbb{C}}^i \cap \mathfrak{k}_{\mathbb{C}}$	Highest weights of $\mathfrak{g}_{\mathbb{C}}^i \cap \mathfrak{k}_{\mathbb{C}}$
		8	7	$(1,0,0,-1,1,1,0)$ $(-1,0,1,0,0,0,0)$
		12	3	$(0,1,0,0,0,0,0)$
36.		4	13	$(1,0,1,-1,0,0,0)$ $(0,-1,1,-1,1,1,0)$ $(0,0,0,0,0,0,2)$
		8	9	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$
		12	4	$(1,-1,1,0,0,0,0)$
		16	1	$(0,1,0,0,0,0,0)$
37.		4	9	$(0,0,0,-1,2,0,0)$ $(0,-1,1,0,-1,1,0)$ $(1,0,1,-1,0,0,0)$
		8	9	$(0,-1,1,-1,1,1,0)$ $(1,0,0,0,-1,1,0)$ $(0,0,0,0,0,0,2)$
		12	5	$(0,-1,0,1,0,0,0)$ $(1,0,0,-1,1,1,0)$
		16	4	$(1,-1,1,0,0,0,0)$
		20	1	$(0,1,0,0,0,0,0)$

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