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4 unipotent classes

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G_{reg} dimension 8

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0

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4 unipotent classes

O_{reg}	dimension 8
\tilde{A}_1	6
A_1	4
$\{1\}$	0

$$G(\mathbb{F}_q) = \mathrm{Sp}_4(\mathbb{F}_q)$$

4 unipotent classes

1	O_{reg}	dimension 8
	\tilde{A}_1	6
	A_1	4
St	$\{1\}$	0

$$G(\mathbb{F}_q) = \mathrm{Sp}_4(\mathbb{F}_q)$$

4 unipotent classes

1	O_{reg}	dimension 8
	\tilde{A}_1	6
not special	A_1	4
St	$\{1\}$	0

$$G(\mathbb{F}_q) = \mathrm{Sp}_4(\mathbb{F}_q)$$

4 unipotent classes

1	O_{reg}	dimension 8
$\{\theta_9, \theta_{10}, \theta_{11}, \theta_{12}\}$	\tilde{A}_1	6
not special	A_1	4
St	$\{1\}$	0

class	θ_9	θ_{10}	θ_{11}	θ_{12}

class	θ_9	θ_{10}	θ_{11}	θ_{12}
q1g	$\frac{1}{2} q(q+1)^2$	$\frac{1}{2} q(q-1)^2$	$\frac{1}{2} q(q^2+1)$	$\frac{1}{2} q(q^2+1)$

class	Θ_9	Θ_{10}	Θ_{11}	Θ_{12}
Θ_{reg}	.	.	.	.
$q|y$	$\frac{1}{2} q(q+1)^2$	$\frac{1}{2} q(q-1)^2$	$\frac{1}{2} q(q^2+1)$	$\frac{1}{2} q(q^2+1)$

class	Θ_9	Θ_{10}	Θ_{11}	Θ_{12}
Θ_{reg}	.	.	.	.
A_i	$\frac{1}{2} q(q+1)$	$-\frac{1}{2} q(q-1)$	$-\frac{1}{2} q(q-1)$	$\frac{1}{2} q(q+1)$
$q|y$	$\frac{1}{2} q(q+1)^2$	$\frac{1}{2} q(q-1)^2$	$\frac{1}{2} q(q^2+1)$	$\frac{1}{2} q(q^2+1)$

class	Θ_9	Θ_{10}	Θ_{11}	Θ_{12}
Θ_{reg}	.	.	.	.
\tilde{A}_1^2	q	.	q	.
\tilde{A}_1'	.	q	.	q
A_1	$\frac{1}{2} q(q+1)$	$-\frac{1}{2} q(q-1)$	$-\frac{1}{2} q(q-1)$	$\frac{1}{2} q(q+1)$
$q|y$	$\frac{1}{2} q(q+1)^2$	$\frac{1}{2} q(q-1)^2$	$\frac{1}{2} q(q^2+1)$	$\frac{1}{2} q(q^2+1)$

class	Θ_9	Θ_{10}	Θ_{11}	Θ_{12}
Θ_{reg}	.	.	.	.
\tilde{A}_1	q	.	q	.
\tilde{A}'_1	.	q	.	q
$s\tilde{A}_1$				
$s\tilde{A}'_1$				
A_1	$\frac{1}{2} q(q+1)$	$-\frac{1}{2} q(q-1)$	$-\frac{1}{2} q(q-1)$	$\frac{1}{2} q(q+1)$
$q|y$	$\frac{1}{2} q(q+1)^2$	$\frac{1}{2} q(q-1)^2$	$\frac{1}{2} q(q^2+1)$	$\frac{1}{2} q(q^2+1)$

class	Θ_9	Θ_{10}	Θ_{11}	Θ_{12}
Θ_{reg}	.	.	.	.
\tilde{A}_1	q	.	q	.
\tilde{A}'_1	.	q	.	q
$s \tilde{A}_1$	$\frac{1}{2}(q+1)$	$\frac{1}{2}(q-1)$	$-\frac{1}{2}(q+1)$	$-\frac{1}{2}(q-1)$
$s \tilde{A}'_1$	$-\frac{1}{2}(q-1)$	$-\frac{1}{2}(q+1)$	$\frac{1}{2}(q-1)$	$\frac{1}{2}(q+1)$
A_1	$\frac{1}{2}q(q+1)$	$-\frac{1}{2}q(q-1)$	$-\frac{1}{2}q(q-1)$	$\frac{1}{2}q(q+1)$
$q y$	$\frac{1}{2}q(q+1)^2$	$\frac{1}{2}q(q-1)^2$	$\frac{1}{2}q(q^2+1)$	$\frac{1}{2}q(q^2+1)$

Fourier transform

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Fourier transform

$$X_g = \frac{1}{2} (\theta_g + \theta_{10} + \theta_{11} + \theta_{12})$$

$$X_{10} = \frac{1}{2} (\theta_g + \theta_{10} - \theta_{11} - \theta_{12})$$

$$X_{11} = \frac{1}{2} (\theta_g - \theta_{10} + \theta_{11} - \theta_{12})$$

Fourier transform

$$X_g = \frac{1}{2} (\theta_g + \theta_{10} + \theta_{11} + \theta_{12})$$

$$X_{10} = \frac{1}{2} (\theta_g + \theta_{10} - \theta_{11} - \theta_{12})$$

$$X_{11} = \frac{1}{2} (\theta_g - \theta_{10} + \theta_{11} - \theta_{12})$$

$$X_{12} = \frac{1}{2} (\theta_g - \theta_{10} - \theta_{11} + \theta_{12})$$

class	Θ_9	Θ_{10}	Θ_{11}	Θ_{12}
Θ_{reg}	.	.	.	.
\tilde{A}_1	q	.	q	.
\tilde{A}'_1	.	q	.	q
$s \tilde{A}_1$	$\frac{1}{2}(q+1)$	$\frac{1}{2}(q-1)$	$-\frac{1}{2}(q+1)$	$-\frac{1}{2}(q-1)$
$s \tilde{A}'_1$	$-\frac{1}{2}(q-1)$	$-\frac{1}{2}(q+1)$	$\frac{1}{2}(q-1)$	$\frac{1}{2}(q+1)$
A_1	$\frac{1}{2}q(q+1)$	$-\frac{1}{2}q(q-1)$	$-\frac{1}{2}q(q-1)$	$\frac{1}{2}q(q+1)$
$q|y$	$\frac{1}{2}q(q+1)^2$	$\frac{1}{2}q(q-1)^2$	$\frac{1}{2}q(q^2+1)$	$\frac{1}{2}q(q^2+1)$

class	χ_9	θ_{10}	θ_{11}	θ_{12}
\mathcal{O}_{reg}}	.	.	.	.
\tilde{A}_1	q	.	q	.
\tilde{A}_1'	q	q	.	q
$s\tilde{A}_1$	.	$\frac{1}{2}(q-1)$	$-\frac{1}{2}(q+1)$	$\frac{1}{2}(q-1)$
$s\tilde{A}_1'$	.	$-\frac{1}{2}(q+1)$	$\frac{1}{2}(q-1)$	$\frac{1}{2}(q+1)$
A_1	q	$-\frac{1}{2}q(q-1)$	$-\frac{1}{2}q(q-1)$	$\frac{1}{2}q(q+1)$
$q|y$	$q(q^2+1)$	$\frac{1}{2}q(q-1)^2$	$\frac{1}{2}q(q^2+1)$	$\frac{1}{2}q(q^2+1)$

class	χ_9	χ_{10}	θ_{11}	θ_{12}
\mathcal{O}_{reg}	\cdot	\cdot	\cdot	\cdot
\tilde{A}_1	q	\cdot	q	\cdot
\tilde{A}'_1	q	\cdot	\cdot	q
$s\tilde{A}_1$	\cdot	q	$-\frac{1}{2}(q+1)$	$\frac{1}{2}(q-1)$
$s\tilde{A}'_1$	\cdot	$-q$	$\frac{1}{2}(q-1)$	$\frac{1}{2}(q+1)$
A_1	q	\cdot	$-\frac{1}{2}q(q-1)$	$\frac{1}{2}q(q+1)$
$\{1\}$	$q(q^2+1)$	\cdot	$\frac{1}{2}q(q^2+1)$	$\frac{1}{2}q(q^2+1)$

class	χ_9	χ_{10}	χ_{11}	θ_{12}
\mathcal{O}_{reg}	\cdot	\cdot	\cdot	\cdot
\tilde{A}_1	q	\cdot	q	\cdot
\tilde{A}'_1	q	\cdot	$-q$	q
$s\tilde{A}_1$	\cdot	q	\cdot	$\frac{1}{2}(q-1)$
$s\tilde{A}'_1$	\cdot	$-q$	\cdot	$\frac{1}{2}(q+1)$
A_1	q	\cdot	\cdot	$\frac{1}{2}q(q+1)$
$q|y$	$q(q^2+1)$	\cdot	q^2	$\frac{1}{2}q(q^2+1)$

class	χ_9	χ_{10}	χ_{11}	χ_{12}
\mathcal{O}_{reg}}	.	.	.	.
\tilde{A}_1	q	.	q	.
\tilde{A}'_1	q	.	$-q$	.
$s\tilde{A}_1$	.	q	.	1
$s\tilde{A}'_1$	.	$-q$	.	1
A_1	q	.	.	q^2
$q|y$	$q(q^2+1)$	.	q^2	q^2

class	$(1, 1)$	$(-1, \varepsilon)$	$(1, \varepsilon)$	$(-1, 1)$
\mathcal{O}_{reg}}	.	.	.	.
\tilde{A}_1^2	q	.	q	.
$\tilde{A}_1^{\prime 2}$	q	.	$-q$	.
$s\tilde{A}_1^2$	.	q	.	1
$s\tilde{A}_1^{\prime 2}$	.	$-q$	.	1
A_1	q	.	.	q^2
$\{1\}$	$q(q^2+1)$	.	q^2	q^2