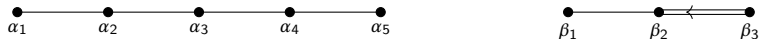


An example: (X, G) of type (C_3, A_5)

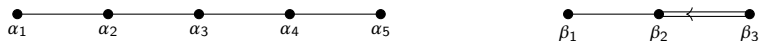
X as the fixed points subgroup of a graph automorphism of G



$$\alpha_1|_{T_X} = \alpha_5|_{T_X} = \beta_1 \quad \alpha_2|_{T_X} = \alpha_4|_{T_X} = \beta_2 \quad \alpha_3|_{T_X} = \beta_3$$

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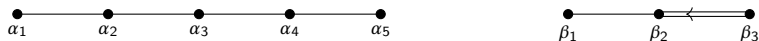
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Let $\{\lambda_i\}$ denote the fundamental weights in $X(T_G)^+$.

$$\lambda = (p-1)\lambda_3 \in X(T_G)^+ \implies L_G(\lambda)|_X = L_X(\lambda|_{T_X})/L_X(\lambda|_{T_X} - \beta_2 - \beta_3)/\dots?$$

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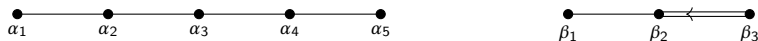
Let $\{\lambda_i\}$ denote the fundamental weights in $X(T_G)^+$.

$$\lambda = (p-1)\lambda_3 \in X(T_G)^+ \implies L_G(\lambda)|_X = L_X(\lambda|_{T_X})/L_X(\lambda|_{T_X} - \beta_2 - \beta_3)/\dots?$$

$L_G(\lambda)|_X$ is self-dual. If \exists third composition factor then \exists maximal vector for $\mathcal{L}(B_X)$ of weight $\theta \in X(T_X)^+$ and $\theta \neq \lambda|_{T_X}, \lambda|_{T_X} - \beta_2 - \beta_3$.

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By the proposition, if

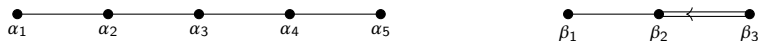
$$m_{L_G(\lambda)|_X}(\lambda|_{T_X} - \alpha|_{T_X}) = m_{L_X(\lambda|_{T_X}) \oplus L_X(\lambda|_{T_X} - \beta_2 - \beta_3)}(\lambda|_{T_X} - \alpha|_{T_X})$$

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$$\text{for } \alpha \in R(G)^+ \setminus \{\alpha_0\} \implies L_G(\lambda)|_X = L_X(\lambda|_{T_X})/L_X(\lambda|_{T_X} - \beta_2 - \beta_3).$$

An example: (X, G) of type (C_3, A_5)

X as the fixed points subgroup of a graph automorphism of G



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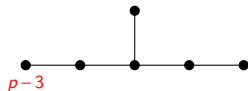
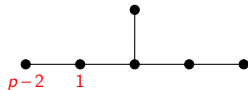
Same arguments works for (X, G) of type (C_n, A_{2n-1}) .

Comparing irreducible and two composition factors $p \geq 13$

Irreducible action

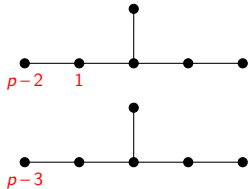
(Testerman '88)

$(X, G) = (F_4, E_6)$

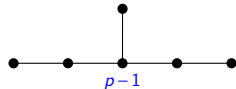
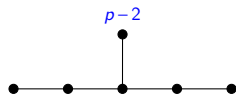
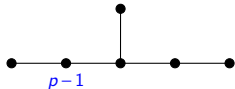
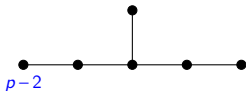


Comparing irreducible and two composition factors $p \geq 13$

Irreducible action
(Testerman '88)
 $(X, G) = (F_4, E_6)$



Two composition factors action
 $(X, G) = (F_4, E_6)$



$(X, G) = (B_4, F_4)$

