

Eine Woche, ein Beispiel

7.7 special irreducible representations of simple Lie algebras

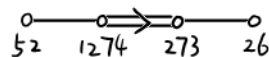
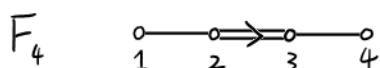
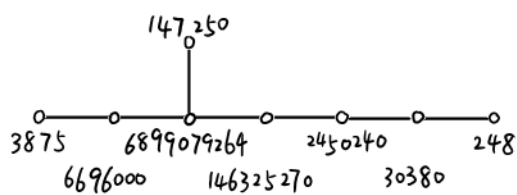
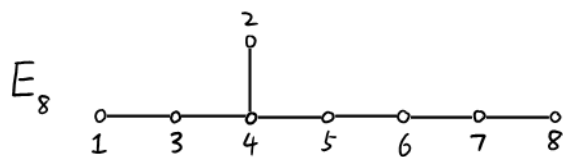
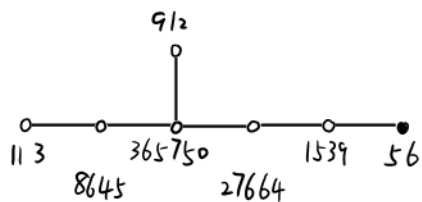
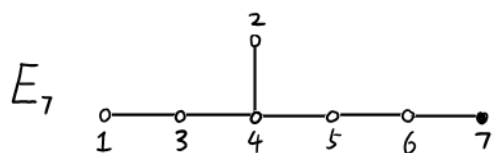
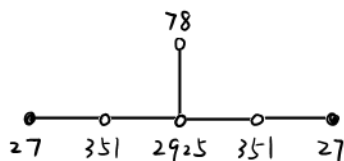
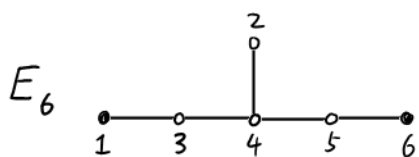
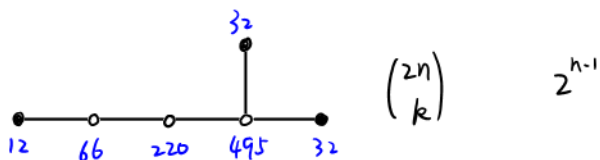
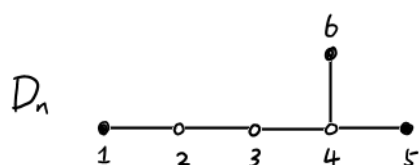
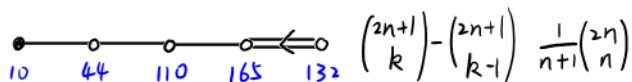
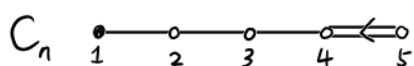
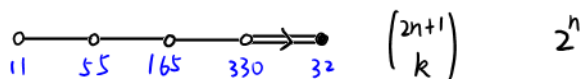
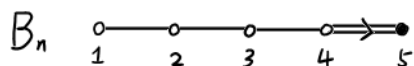
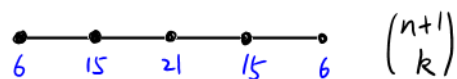
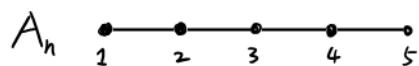
This document is a continuation for [2021.05.07_liegroup], [2021.07.18_irr_rep_of_semi_Lie_alg], [2021.07.25_irr_rep_of_SnAn], [2024.06.30_starting_functions].

The goal is to collect enough information on the representation sides, and then verify it on the perverse sheaf side.

Setting: We consider simple Lie algebras over \mathbb{C} .

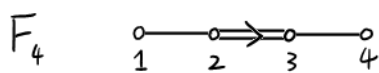
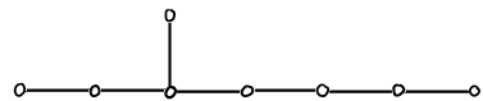
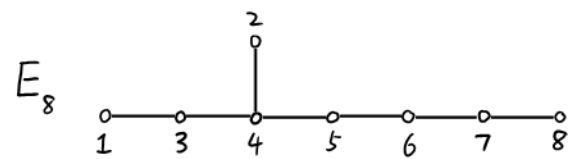
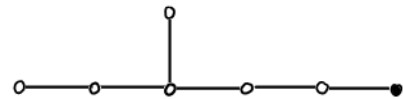
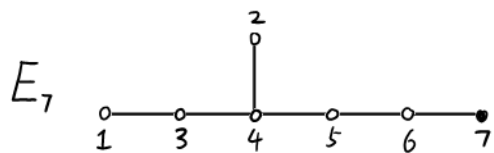
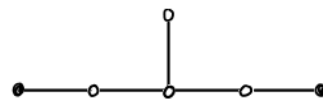
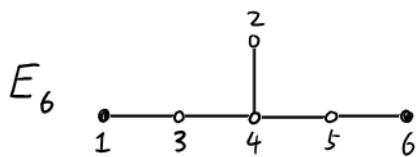
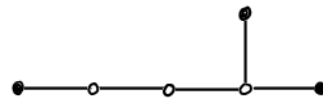
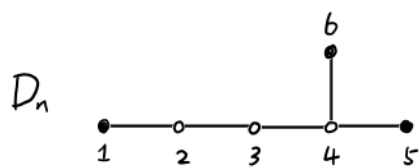
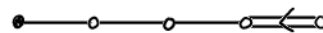
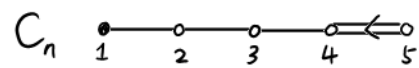
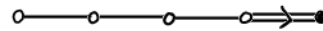
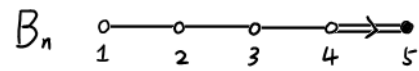
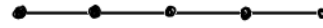
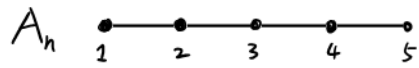
1. labeling & basic rep dim
2. quasi-minuscule & adjoint reps

1. labeling & basic rep dim



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2. quasi-minuscule & adjoint reps

•: minuscule rep
 x: quasi-minuscule rep
 x: adjoint rep

$$A_n \quad \overset{1}{\bullet} \text{---} \bullet \text{---} \bullet \text{---} \bullet \text{---} \overset{1}{\bullet} \quad \begin{array}{cc} \text{dim/dim} & \text{rk/rk} \\ n^2+2n & n \end{array}$$

$$B_n \quad \overset{x}{\bullet} \text{---} \overset{x}{\bullet} \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \quad \begin{array}{cc} 2n^2+n/2n+1 & n/1 \end{array}$$

$$C_n \quad \overset{2}{\bullet} \text{---} \overset{x}{\bullet} \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \quad \begin{array}{cc} 2n^2+n/2n^2-n-1 & n/n-1 \end{array}$$

$$D_n \quad \bullet \text{---} \overset{x}{\bullet} \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \quad \begin{array}{cc} 2n^2-n & n \end{array}$$

$$E_6 \quad \bullet \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \quad \begin{array}{cc} 78 & 6 \end{array}$$

$$E_7 \quad \overset{x}{\bullet} \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \quad \begin{array}{cc} 133 & 7 \end{array}$$

$$E_8 \quad \circ \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \circ \quad \begin{array}{cc} 248 & 8 \end{array}$$

$$F_4 \quad \overset{x}{\bullet} \text{---} \circ \text{---} \circ \text{---} \circ \text{---} \overset{x}{\bullet} \quad \begin{array}{cc} 52/26 & 4/2 \end{array}$$

$$G_2 \quad \overset{x}{\bullet} \text{---} \circ \text{---} \circ \text{---} \overset{x}{\bullet} \quad \begin{array}{cc} 14/7 & 2/1 \end{array}$$