

# Halacheva on Kirillov-Reshetikhin and Demazure Crystals

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## I. preliminaries

1. Notation:  $\mathfrak{g}$  Kac-Moody alg

$\Gamma(I, E)$  Dynkin diag

$\Delta$  - root system

$\{\alpha_i, \alpha_i^\vee : i \in I\}$  - simple roots / co-roots.

$P/P^\vee$  : weight / co-weight lattice

$Q/Q^\vee$  : root / co-root lattice

⋮

$$U_q(\mathfrak{g}) \supset U_q'(\mathfrak{g})$$

$E_i, F_i, q^h$

$E_i, F_i, k_i \neq 1$

$k_i = q^{s_i \alpha_i^\vee}$

$V$  - a  $U_q(\mathfrak{g})$ -rep  $\xrightarrow{\text{crystal basis}}$   $\overset{\text{crystal}}{\mathcal{B}}$

⋮