© 2025 Heldermann Verlag Journal of Lie Theory 35 (2025) 083–100

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The Affine Closure of $T^*(SL_n/U)$

We show that the affine closure $\overline{T^*(\mathrm{SL}_n/U)}$ has symplectic singularities, in the sense of Beauville. In the special case n = 3, we show that the affine closure $\overline{T^*(\mathrm{SL}_3/U)}$ is isomorphic to the closure $\overline{\mathcal{O}}_{\min}$ of the minimal nilpotent orbit \mathcal{O}_{\min} in \mathfrak{so}_8 . Moreover, the quasi-classical Gelfand-Graev action of the Weyl group W on $\overline{T^*(\mathrm{SL}_3/U)}$ can be identified with the restriction to $\overline{\mathcal{O}}_{\min}$ of E. Cartan's triality action on \mathfrak{so}_8 .

Keywords: Symplectic singularities, triality action.

MSC: 20G05, 17B10, 14M15.