

Zeitschrift: Commentarii Mathematici Helvetici
Herausgeber: Schweizerische Mathematische Gesellschaft
Band: 68 (1993)

Erratum: Erratum: Complexity and rank double cones and tensor products decompositions.
Autor: Panyushev, D.I.

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. [Siehe Rechtliche Hinweise.](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. [Voir Informations légales.](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. [See Legal notice.](#)

Download PDF: 06.02.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

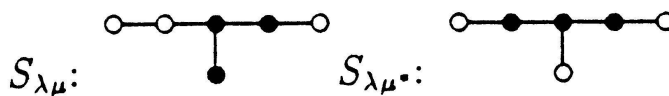
Erratum: D.I. Panyushev, *Complexity and rank of double cones and tensor product decompositions*, Comment. Math. Helvetici 68 (1993), 455–468.

In preparing the above-mentioned paper for printing, the diagrams on pages 461 and 463 were erroneously omitted. The correct versions read as follows:

Page 461

(1.8) *Remarks.* 1. It may happen that $\Gamma(Z) \neq \mathbf{Z}\Gamma(Z) \cap \mathcal{X}(T)_+$, i.e. the canonical embedding $S_{\lambda\mu} \subset G$ does not determine $\Gamma(Z)$ completely.

2. The subgroups $S_{\lambda\mu}$ and $S_{\lambda\mu^*}$ are isomorphic and conjugated in G by corollary 1, nevertheless, they may have *different* canonical embeddings. For example, let $G = E_6$ and $\mu = \lambda = \varphi_1, \mu^* = \varphi_5$ are the fundamental weights with numeration as in [10]. Then $S_{\lambda\mu} \cong S_{\lambda\mu^*} \cong A_3$, but their canonical embeddings are described by the following pictures:



(The black vertices indicate the simple roots of $S_{\lambda\mu}$ and $S_{\lambda\mu^*}$.)

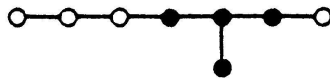
(1.9) The previous results show that in order to compute the complexity and the rank semigroup of a double cone one has to find the canonical embedding of $S_{\lambda\mu}$ and $\tilde{S}_{\lambda\mu}$. The next result explains how this can be done.

Page 463

(2.2) EXAMPLE. $G = E_8$, $Z = Z(1, 1)$.

Here $(L'_1, m_1) = (E_7, 2\varphi_1 + 2)$. According to [1] we have $\text{Lie } S_{11} = D_4$. Therefore $r = 4$, $2c + r = 12$ and $c = 4$. In particular, we find out that $\dim k[Z]^U = 8$.

Next, $(L_1, m_1) = (E_7 \times k^*, \varphi_1 \otimes \varepsilon + \varphi_1 \otimes \varepsilon^{-1} + \varepsilon^2 + \varepsilon^{-2})$. Therefore $\text{Lie } \tilde{S}_{11} = \text{Lie } S_{11}$ and $\tilde{c} = c - 2 = 2$. According to the corollary 3(ii) the canonical embedding $S_{11} \subset E_8$ implies the embedding of the Dynkin diagrams. Here it can be done in a unique way. Hence, the canonical embedding is described by the following picture:



That is, $\alpha_4, \alpha_5, \alpha_6, \alpha_8$ is the system of simple roots of S_{11} and according to Corollary 3 $\Gamma(Z(1, 1))$ is contained in $M = \langle \alpha_4, \alpha_5, \alpha_6, \alpha_8 \rangle^\perp = \langle \tilde{\varphi}_1, \tilde{\varphi}_2, \tilde{\varphi}_3, \tilde{\varphi}_7 \rangle$. This means, that for any n, m the tensor product decomposition $\tilde{\varphi}_1^n \otimes \tilde{\varphi}_1^m$ contains highest weights only from M .

*ul. akad. Anokhina
d.30, kor. 1, kv. 7
117602 Moscow, Russia*