By a known theorem from 2012, every open subgroup of a complete Kac-Moody group $G$ over a finite field is contained with finite index in some parabolic subgroup of $G$. Starting from that result, the reviewed paper by Caprace-Marquis-Reid elaborates further on the family of closed locally normal subgroups of $G$ (i.e. such a subgroup of $G$ is one whose normalizer is open in $G$).

The first main result of their paper relates in a unique way, up to some equivalence relations on both sides, the class $O(G)\backslash_w$ of open subgroups of $G$ to the class of standard parabolic subgroups of the Weyl group of $G$. Then the second main result describes the intimate relation between the class $O(G)\backslash_w$ and the set $LN(G)$ of closed locally normal subgroups of $G$. This relies on the close understanding of contraction groups and the Levi decompositions.

Finally, the third main theorem proves that a closed subgroup that appears as direct factor of an open subgroup of a one-ended and locally finitely generated complete Kac-Moody group $G$ over a finite field can only be discrete or open.

Reviewer: Corina Ciobotaru (Râmnicu Vâlcea)

MSC:
20E07 Subgroup theorems; subgroup growth
22D05 General properties and structure of locally compact groups

Keywords:
locally compact Kac-Moody groups; locally normal subgroups

Full Text: DOI arXiv