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H. Ben Messaoud
Dép. de Mathématiques, Faculté des Sciences, 5019 Monastir, Tunisia
Hechmi.BenMessaoud@fsm.rnu.tn

G. Rousseau
Institut Elie Cartan, UMR 7502, CNRS, INRIA, Université de Nancy, B.P 239, 54506 Vandoeuvre lès Nancy, France
rousseau@iecn.u-nancy.fr

Sous-algèbres de Cartan des Algèbres de Kac-Moody Affines Réelles Presque Compactes

Almost compact real forms of affine Kac-Moody Lie algebras have been already classified. In the present paper, we study the conjugate classes of their Cartan subalgebras under the adjoint groups or the full automorphism groups. Maximally compact Cartan subalgebras are all conjugated to a standard one (noted ${}^c\mathfrak{h}$) and one may compare any Cartan subalgebra to ${}^c\mathfrak{h}$. Cartan subalgebras are related to non compact unitary roots of ${}^c\mathfrak{h}$ and one can see especially that the number of the conjugate classes is always finite. This approach is a generalization of the classification by Carmona of Cartan subalgebras for real semi-simple Lie algebras which is different from (but equivalent to) that of Sugiura. The approach of Sugiura, which consists in comparing any Cartan subalgebra to a maximally split one, does not adapt to our framework of study as maximally split Cartan subalgebras are not conjugated in general.

Keywords: Affine Kac-Moody Lie algebras, almost compact real forms, Cartan subalgebra.

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