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Isomorphism of loop algebras

The (twisted) loop algebra $L(\mathfrak{g}, \sigma)$ of a Lie algebra $\mathfrak{g}$ relative to an automorphism σ of finite order is an important construction in the theory of infinite dimensional Lie algebras. When the base algebra $\mathfrak{g}$ is a finite dimensional simple Lie algebra, loop algebras provide explicit constructions of affine Kac-Moody Lie algebras. When the base algebra is affine, loop algebras are used to construct extended affine Lie algebras of nullity two. In this talk, based on joint work with Stephen Berman and Arturo Pianzola, we describe necessary and sufficient conditions for two loop algebras of symmetrizable Kac-Moody Lie algebras to be isomorphic. Our approach is to view loop algebras as forms of untwisted loop algebras.