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## SOME SIMILARITIES AND DISSIMILARITIES IN LOOP AND GROUP ALGEBRA

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In this paper we have studied for the first time the main similarities and dissimilarities between some special elements like regular elements, idempotents, quasi regular elements and zero divisors in loop algebras. Some of the striking differences are established. We have proved that in general loop algebras have more than one right (left) inverse. We prove the element  $x - 1$  in  $Z_nL$  under certain conditions is quasi regular if and only if  $n$  is odd. (here  $x$  is assumed to be an idempotent  $x^2 = x$ ). Also  $xy = 0$  ( $x, y \in Z_nL$ ) are quasi regular if and only if  $(2m_1 + 2m_2 - 1, k) = 1$  where  $x = m_1(1 + h)$ ,  $y = m_2(1 + h)$  and  $h^2 = 1$  with  $2m_1m_2 \equiv 0 \pmod{k}$ . Finally we have established an idempotent in a loop ring  $FL$  can be both right and left quasi regular.

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