

# Inner derivations of simple Lie pencils of rank 1

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## Abstract

© 2017, Allerton Press, Inc. We prove that simple Lie pencils of rank 1 over an algebraically closed field  $P$  of characteristic 0 with operators of left multiplication being derivations are of the form of a sandwich algebra  $M_3(U, D')$ , where  $U$  is the subspace of all skew-symmetric matrices in  $M_3(P)$  and  $D'$  is any subspace containing  $\square E \square$  in the space of all diagonal matrices  $D$  in  $M_3(P)$ .

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## Keywords

Cartan subalgebra, inner derivation, Lie pencil, sandwich algebra, torus

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