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Title:	Extensions and automorphisms of Lie algebras
Authors:	Singh, Mahender (/jspui/browse?type=author&value=Singh%2C+Mahender)
Keywords:	automorphisms Lie algebras
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Publisher:	World Scientific Publishing Co. Pte Ltd
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Abstract:	Let $0 \rightarrow A \rightarrow L \rightarrow B \rightarrow 0$ be a short exact sequence of Lie algebras over a field F , where A is abelian. We show that the obstruction for a pair of automorphisms in $\text{Aut}(A) \times \text{Aut}(B)$ to be induced by an automorphism in $\text{Aut}(L)$ lies in the Lie algebra cohomology $H^2(B; A)$. As a consequence, we obtain a four term exact sequence relating automorphisms, derivations and cohomology of Lie algebras. We also obtain a more explicit necessary and sufficient condition for a pair of automorphisms in $\text{Aut}(L_{n,2}^{(1)}) \times \text{Aut}(L_{n,2}^{ab})$ to be induced by an automorphism in $\text{Aut}(L_{n,2})$, where $L_{n,2}$ is a free nilpotent Lie algebra of rank n and step 2.
URI:	https://arxiv.org/abs/1508.01850 (https://arxiv.org/abs/1508.01850) http://hdl.handle.net/123456789/1841 (http://hdl.handle.net/123456789/1841)
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