

## On isoclinism and Baer's theorem for Lie superalgebras

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**Abstract.** In this paper, we define isoclinism for Lie superalgebras and using the concept of isoclinism, we give the structure of all covers of Lie superalgebras when their Schur multipliers are finite dimensional. It has been shown that the maximal stem extensions of Lie superalgebras are precisely same as the stem covers. Furthermore, we have defined stem Lie superalgebra and prove that each isoclinic family  $\mathcal{C}$  contain a stem Lie superalgebra  $T$ , and it is the one having minimum even and odd dimension. Finally, we have proved a converse of Schur's theorem and have given a bound for the stem Lie superalgebra. Then we state and prove Baer's theorem (generalisation of Schur's theorem) and a converse of it.

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