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Moufang semidirect products of loops with groups and inverse property extensions

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Abstract: We investigate loops which can be written as the semidirect product of a loop and a group, and we provide a necessary and sufficient condition for such a loop to be Moufang. We also examine a class of loop extensions which arise as a result of a finite cyclic group acting as a group of semiautomorphisms on an inverse property loop. In particular, we consider closure properties of certain extensions similar to those as in [S. Gagola III, *Cyclic extensions of Moufang loops induced by semiautomorphisms*, J. Algebra Appl. **13** (2014), no. 4, 1350128], but from an external point of view.

Keywords: extensions; semidirect products; Moufang loops; inverse property loops

AMS Subject Classification: 20N05

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