

Gábor P. Nagy

On centerless commutative automorphic loops

Comment.Math.Univ.Carolin. 55,4 (2014) 485–491.

Abstract: In this short paper, we survey the results on commutative automorphic loops and give a new construction method. Using this method, we present new classes of commutative automorphic loops of exponent 2 with trivial center.

Keywords: commutative automorphic loop; Lie algebra of characteristic 2; nuclear extension

AMS Subject Classification: 20N05

REFERENCES

- [1] Bruck R.H., Paige J.L., *Loops whose inner mappings are automorphisms*, Ann. of Math. (2) **63** (1956), 308–323.
- [2] Cicalò S., de Graaf W.A., Schneider C., LieAlgDB – a GAP package, Version 2.1, November 2010, <http://www.gap-system.org/Packages/liealgdb.html>.
- [3] Csörgő P., *The multiplication group of a finite commutative automorphic loop of order of power of an odd prime p is a p -group*, J. Algebra **350** (2012), 77–83.
- [4] Csörgő P., *All automorphic loops of order p^2 for some prime p are associative*, J. Algebra Appl. **12** (2013), no. 6, 1350013.
- [5] de Barros D.A.S., Grishkov A., Vojtěchovský P., *Commutative automorphic loops of order p^3* , J. Algebra Appl. **11** (2012), 1250100.
- [6] Drápal A., *A class of commutative loops with metacyclic inner mapping groups*, Comment. Math. Univ. Carolin. **49** (2008), no. 3, 357–382.
- [7] Hora J., Jedlička P., *Nuclear semidirect product of commutative automorphic loops*, J. Algebra Appl. **13** (2014), 1350077.
- [8] Jedlička P., Kinyon M., Vojtěchovský P., *Constructions of commutative automorphic loops*, Comm. Algebra **38** (2010), no. 9, 3243–3267.
- [9] Jedlička P., Kinyon M., Vojtěchovský P., *The structure of commutative automorphic loops*, Trans. Amer. Math. Soc. **363** (2011), no. 1, 365–384.
- [10] Jedlička P., Kinyon M., Vojtěchovský P., *Nilpotency in automorphic loops of prime power order*, J. Algebra **350** (2012), 64–76.
- [11] Johnson K.W., Kinyon M.K., Nagy G.P., Vojtěchovský P., *Searching for small simple automorphic loops*, LMS J. Comput. Math. **14** (2011), 200–213.
- [12] Kinyon M., Grishkov A., Nagy G.P., *Solvability of commutative automorphic loops*, Trans. Amer. Math. Soc., to appear, [arXiv:1111.7138](https://arxiv.org/abs/1111.7138).
- [13] Kinyon M., Kunen K., Phillips J.D., Vojtěchovský P., *The structure of automorphic loops*, in preparation, [arXiv:1210.1642](https://arxiv.org/abs/1210.1642).