

## B. Baumeister

*Do finite Bruck loops behave like groups?*

Comment.Math.Univ.Carolin. 53,3 (2012) 337–346.

**Abstract:** This note contains Sylow's theorem, Lagrange's theorem and Hall's theorem for finite Bruck loops. Moreover, we explore the subloop structure of finite Bruck loops.

**Keywords:** finite loops, finite Bruck loops, finite Bol loops, finite  $A_r$ -loops, classical theorems for finite loops

**AMS Subject Classification:** 20N05, 20B05

## REFERENCES

- [AA43] Albert A.A., *Quasigroups I*, Trans. Amer. Math. Soc. **54** (1943), 507–519.
- [A86] Aschbacher M., *Finite Group Theory*, Cambridge University Press, Cambridge, 1986.
- [A05] Aschbacher M., *On Bol loops of exponent 2*, J. Algebra **288** (2005), 99–136.
- [AKP06] Aschbacher M., Kinyon M., Phillips J.D., *Finite Bruck loops*, Trans. Amer. Math. Soc. **358** (2006), no. 7, 3061–3075.
- [Ba39] Baer R., *Nets and groups*, Trans. Amer. Math. Soc. **47** (1939), 110–141.
- [Ba45] Baer R., *The homomorphism theorems for loops*, Amer. J. Math. **67** (1945), 450–460.
- [Bo37] Bol G., *Gewebe und Gruppen*, Math. Ann. **114** (1937), 414–431.
- [BS10] Baumeister B., Stein A., *Self-invariant 1-factorizations of complete graphs and finite Bol loops of exponent 2*, Beiträge Algebra Geom. **51** (2010), no. 1, 117–135.
- [BS11] Baumeister B., Stein A., *The finite Bruck loops*, J. Algebra **330** (2011), 206–220.
- [BSS11] Baumeister B., Stein A., Stroth G., *On Bruck loops of 2-power exponent*, J. Algebra **327** (2011), 316–336.
- [Br58] Bruck R.H., *A survey of binary systems*, Ergebnisse der Mathematik und ihrer Grenzgebiete, Neue Folge, Heft 20, Reihe: Gruppentheorie, Springer, Berlin-Göttingen-Heidelberg, 1958.
- [Bu78] Burn R.P., *Finite Bol loops*, Math. Proc. Cambridge Philos. Soc. **84** (1978), 377–385.
- [Ga11] Gagola S.M., III, *How and why Moufang loops behave like groups*, Quasigroups Related Systems **19** (2011), 1–22.
- [G64] Glauberman G., *On loops of odd order*, J. Algebra **1** (1964), 374–396.
- [G68] Glauberman G., *On loops of odd order II*, J. Algebra **8** (1968), 393–414.
- [JKV11] Jedlička P., Kinyon M.K., Vojtěchovský P., *The structure of commutative automorphic loops*, Trans. Amer. Math. Soc. **363** (2011), 365–384.
- [JKNV11] 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.
- [N98] Nagy G.P., *Solvability of universal Bol 2-loops*, Comm. Algebra **26** (1998), no. 1, 549–555.
- [N08] Nagy G.P., *A class of simple proper Bol loops*, Manuscripta Math. **127** (2008), no. 1, 81–88.
- [N09] Nagy G.P., *A class of finite simple Bol loops of exponent 2*, Trans. Amer. Math. Soc. **361** (2009), 5331–5343.
- [N] Nagy G.P., *Finite simple left Bol loops*  
[http://www.math.u-szeged.hu/~nagyg/pub/simple\\_bol\\_loops.html](http://www.math.u-szeged.hu/~nagyg/pub/simple_bol_loops.html)
- [S44] Smiley M.F., *An application of lattice theory to quasigroups*, Bull. Amer. Math. Soc. **21** (1944), 782–786.