1112-17-98 **Elena Zizioli*** (elena.zizioli@unibs.it) and **Stefano Pasotti**. *Slid extension of loops.*

Let P be a nonempty set and $\Gamma \subseteq$ Sym P be a regular permutation set acting on P. It is well known that, upon fixing $o \in P$, we can associate to (P, Γ, o) a loop $(P, +)$ and conversely to any loop we can associate a suitable regular permutation set. The detailed study of the relationships between these structures is used here for building a new loop $(L, \oplus)$ starting from the loops $(K, +)$, equipped with a well ordering "$\preceq$", $(P, \widehat{+})$ and assuming that a further loop operation "$+$" (which may also coincide with "$\widehat{+}$") is defined on P.

We call the loop $(L, \oplus)$ *slid extension* of P by K. We study the dependence of the properties of the new loop $(L, \oplus)$ on the corresponding properties of the initial ones (associativity, automorphic inverse properties, Bol and Moufang conditions) and characterize the nuclei of $(L, \oplus)$. Most of the results presented here appeared in [1].

This procedure can provide examples of proper loops also when the initial loops are groups.

References

[1] Pasotti, S. and E. Zizioli, *Slid product of loops: a generalization*, Res. Math. **65** (2014), pp. 193-212.

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