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*Commutators and associators in Catalan loops*

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**Abstract:** Various commutators and associators may be defined in one-sided loops. In this paper, we approximate and compare these objects in the left and right loop reducts of a Catalan loop. To within a certain order of approximation, they turn out to be quite symmetrical. Using the general analysis of commutators and associators, we investigate the structure of a specific Catalan loop which is non-commutative, but associative, that appears in the original number-theoretic application of Catalan loops.

**Keywords:** loop, right loop, left loop, commutator, associator

**AMS Subject Classification:** 20N05, 20F12

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