Higgins commutators in some varieties of semigroups and magmas

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In a subvariety of the variety of semigroups (or more generally, of magmas) with a zero element, the Higgins commutator of two subobjects of an object can be defined using the categorical co-smash product construction. The co-smash product can be viewed as a binary operation on the category, but it need not be associative. We will look into what we can say about a variety of magmas with zero when we require that the co-smash product in that variety is associative.

The Higgins commutator is usually defined in a pointed category, which the category of inverse semigroups is not. However, we will modify the construction to define a commutator of inverse subsemigroups.

References

[1] Ü. Reimaa, T. Van der Linden, C. Vienne, Associativity and the cosmash product in operadic varieties of algebras, *Illinois Journal of Mathematics*, (to appear).

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[1]Joint work with Tim Van der Linden and Corentin Vienne.