

# A semigroup presentation for the singular part of the partial endomorphism monoid of a free $G$ -act (of finite rank)

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## Abstract

In this talk, I will be discussing semigroup presentations for semigroup products of the form  $US$  where  $U$  and  $S$  are semigroups satisfying the following conditions:

- $uS \subseteq Su$  for every  $u \in U$ ;
- if  $us = vt$  then  $u = v$  for every  $u, v \in U$  and  $s, t \in S$ .

Examples of semigroups that arise in this way abound: inverse semigroups, almost-factorisable inverse semigroups, factorisable inverse monoids and (left) restrictions semigroups to name a few. Significantly, from these presentations, one can obtain a semigroup presentation for the singular part of the partial endomorphism monoid of a free  $G$ -act of finite rank. This work was a collaboration with Dolinka, East, Gould and Zenab.

**Keywords:** semigroup, semigroup presentation, monoid.