

Rees matrix covers and strong Morita equivalence of partially ordered semigroups

Lauri Tart
University of Tartu
Tartu, Estonia

We show that partially ordered semigroups S and T with local units are strongly Morita equivalent if and only if there exists a surjective strict local isomorphism to T from a factorizable Rees matrix posemigroup over S . This result can be further refined for regular posemigroups, in which case we have the following: regular posemigroups S and T are strongly Morita equivalent if and only if there exists a surjective strict local isomorphism to T from a factorizable regular Rees matrix posemigroup over S . These results demonstrate that a posemigroup S with local units is strongly Morita equivalent to any factorizable Rees matrix posemigroup over S . They also provide a way to link D. McAlister's work on regular Rees matrix covers (see [1]) to the strong Morita equivalence of posemigroups.

References

- [1] D. B. McAlister, Regular Rees matrix semigroups and regular Dubreil-Jacotin semigroups, *J. Aust. Math. Soc. (Series A)*, 31, 1981, 325-336.