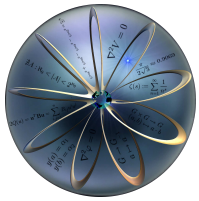

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McAlister covering theorem

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A subset X in an inverse semigroup S is called *unitary* if for any elements $x \in X$ and $s \in S$, $xs \in X$ or $sx \in X$ implies $s \in X$.

An inverse semigroup is *E-unitary* if its semigroup of idempotents is unitary.

Theorem. *Let S be an inverse semigroup; then, there exists an E-unitary inverse semigroup P and a surjective, idempotent-separating homomorphism $\theta : P \to S$.*

Also, if S is finite, then P may be chosen to be finite as well.

Note that a homomorphism is *idempotent-separating* if it is injective on idempotents.

References

[1] M. Lawson, *Inverse Semigroups: The Theory of Partial Symmetries*, World Scientific, 1998