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*Von Neumann Algebras and Extensions of Inverse Semigroups*

Recall that a maximal abelian subalgebra  $D$  of a von Neumann algebra  $M$  is Cartan if the unitaries  $U \in M$  satisfying  $UDU^* \subseteq D$  span a dense subset of  $M$ .

Feldman and Moore gave a complete description of Cartan MASAs in von Neumann algebras with separable preduals, in terms of measured equivalence relations. I will present joint work with Allan Donsig and David Pitts in which we describe a bijective correspondence between the family of all Cartan pairs and a certain family of extensions of inverse semigroups.