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Reflection Monoids

The inverse monoid of all partial linear isomorphisms a vector space V is denoted by $ML(V)$. A *partial reflection* is defined to be the restriction of a reflection of V to a subspace of V, and a *reflection monoid* is a factorisable inverse submonoid of $ML(V)$ generated by partial reflections. A reflection monoid can be characterised by two pieces of data: a reflection group W on V and a collection of subspaces of V that forms a W-invariant semilattice and contains V itself. In the talk we will outline the basic properties of reflection monoids and give some examples. We also mention connections with Renner monoids, and give the orders of, and presentations for, some of the monoids.