Upcycled Symmetries (abstract)

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Recent years have seen an explosion of generalisations of the idea of symmetry in particle physics. These include higher form symmetries, higher group symmetries and, in particular, non-invertible symmetries. All of these are characterised by the necessity of moving beyond the groups and into more complicated structures, whose physical implications are not yet fully understood.

In this talk I will give a pedagogical introduction to non-invertible symmetries with illustrative examples in familiar systems (QM and 2d Ising). I will then show how we can recover group structure by exponentiation, and why this is advantageous when calculating observables.