

Simple totally disconnected locally compact groups.

Since the start of the century there has been increased interest in totally disconnected locally compact (tdlc) groups and a structure theory is starting to emerge.

A special role is played by the class S of tdlc groups that are compactly generated, topologically simple and not discrete. The theory is in need of more examples with a view to some sort of classification.

Full groups of homeomorphisms of Cantor space are a rich source of simple groups.

In joint work with Colin Reid, it is shown that, given the right conditions on the "seed" group, the full group can be given a totally disconnected locally compact topology and it contains a big simple compactly generated subgroup.

An example of this is Neretin's group of almost automorphisms of a tree, further examples will be given.

It is also shown that this construction accounts for all groups in one of the five types of groups in S , up to local isomorphism (the totally disconnected analogue of having the same Lie algebra in the connected case).

No knowledge of topological groups will be assumed for this talk.