

Tommaso Isola - Spectral triples for noncommutative solenoidal spaces from self-coverings

(joint work with Valeriano Aiello and Daniele Guido)

We will give examples of noncommutative solenoidal spaces, which are inductive limits of a sequence of isomorphic  $C^*$ -algebras. Then, starting from a spectral triple on the base space, we construct spectral triples on the intermediate coverings, in such a way that the covering projections are locally isometric.

Such triples are shown to converge, in a suitable sense, to a semifinite spectral triple on the direct limit of the tower of coverings (i.e. on the noncommutative solenoidal spaces).

Some of the self-coverings described are given by the inclusion of the fixed point algebra in a  $C^*$ -algebra acted upon by a finite abelian group.

In all the examples treated, the noncommutative solenoidal spaces have the same metric dimension and volume as on the base space, but are not quantum compact metric spaces, namely the pseudo-metric induced by the spectral triple does not produce the weak\* topology on the state space.