PAULO CARRILLO, University of Paris 7, 175, rue de Chevaleret, Paris, France

Compactly supported analytic indices for Lie groupoids and applications

For any Lie groupoid, I will explain how to construct an analytic index morphism taking values in a modified K-theory group which involves the convolution algebra of compactly supported smooth functions. The construction is performed by using a suitable deformation algebra of smooth functions over the tangent groupoid. This allows in particular to prove a more primitive version of the Connes–Skandalis Longitudinal index Theorem for foliations, that is, an index theorem taking values in a group that can still paired with Cyclic cocycles. As another application, for D a gr-PDO elliptic operator with associated index $\mathrm{ind}\, D \in K_0\big(\mathrm{ci}_c(\mathrm{gr})\big)$, we have that the pairing

$$\langle \mathrm{ind}\, D, \tau \rangle,$$

with τ a bounded continuous cyclic cocycle, only depends on the principal symbol class $[\sigma(D)] \in K^0(A^*\,\mathrm{gr})$. The result is completely general for Étale groupoids. I will discuss some potential applications to the Novikov's conjecture.