

## Proper actions of Lie groups and higher APS index theory

*mardi 30 mai 2017 16:55 (45 minutes)*

In this talk I'll report on joint work in progress with Paolo Piazza about higher APS index theory in the presence of a Lie group symmetry.

I will first review the higher index theorem for proper, co-compact Lie group actions on closed manifolds. After that I will consider the generalization to

the APS-setting where the manifold has a boundary and is equipped with a Dirac operator which is invariant under the action of the group. The higher indices of this operator are associated to smooth group cocycles and defined via the pairing of (relative) K-theory with (relative) cyclic cohomology. Comparing with the case of closed manifolds, I will explain how the APS setting differs from it and requires a much more involved analysis.

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