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Quantizations and index theory

Abstract

One way to describe succinctly local index theory on closed spin manifolds could be the following slogan of Quillen : Dirac operators are a "quantization" of connections, and index theory is a "quantization" of the Chern character. For non necessarily spin manifolds, pseudodifferential operators and their symbolic calculus play a crucial role in the original proofs of the index theorem. However, symbols may also be viewed as a deformation quantization of functions on the cotangent bundle, which has led to other fruitful approaches to index theory through a "quantization" process. Methods used in these two different quantization pictures do not seem to be quite related a priori. The upshot of the talk will be to see that these different theories might have more to say to each other, and that far reaching index problems may be solved very directly from such an interaction.

Talk time: 07/22/2016 2:30PM— 07/22/2016 2:50PM
Talk location: Cupples I Room 115

Special Session: Non-commutative geometry. Organized by X. Tang.