Prof. Markus J. Pflaum (Colorado)
Higher index theorems on orbifolds

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We show how the higher index introduced by Connes-Moscovici can be reinterpreted as a pairing in Alexander-Spanier homology theory. This opens up the way to define algebraic and analytic higher indices for orbifolds. Given a symplectic orbifold and a deformation quantization on it, we then prove an algebraic higher index theorem on orbifolds by computing the pairing between cyclic cocycles and the K-theory of the formal deformation quantization. As an application, we obtain the analytic higher index theorem by Connes-Moscovici and its extension to orbifolds.
The talk is based on joint work with X. Tang and H. Posthuma.

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