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On (interesting) quotients of noncommutative manifolds

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There is a plenitude of interesting manifolds that are obtained as quotients by an action of a finite group. A good example are quotients of tori, which are so-called Bieberbach manifolds or quotients of spheres (lens spaces). In the classical case there are only two 2-dimensional Bieberbach manifolds, however, it appears that in the noncommutative case a pillow (an orbifold with four corners) is more regular.

I will discuss the problem how to distinguish noncommutative "manifolds" from "orbifolds" using various methods of noncommutative geometry. A typical example to illustrate these methods are the pillows and Moyal cones.

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