

Examples of Noncommutative Manifolds: Spherical Manifolds and
Complex Tori (after Connes, Landi, Dubois-Violette, Polishchuk and
Schwarz)

(4 Lectures)

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These lectures will survey some interesting examples of noncommutative manifolds. We begin by studying spherical manifolds, these noncommutative manifolds arise from K-theoretic considerations involving the Chern character. Then we discuss in detail the structure and geometry of the noncommutative 3-spheres, here some ideas coming from noncommutative algebraic geometry will be relevant. In the last lecture we will study complex noncommutative tori and holomorphic bundles on them.