

Analysis on quantum tori

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Abstract. Quantum tori are fundamental examples in operator algebras and noncommutative geometry. Their algebraic and geometric aspects have been well understood. However, the study on their analytic aspect has been started only recently. This talk will give a brief survey of the recent development on analysis on quantum tori. We will present two families of results: the first one concerns the convergence of Fourier series, and the second deals with the embedding and characterizations of Sobolev and Besov spaces. As application to noncommutative geometry, we will discuss the very recent results of Sukochev *et al* on Connes' quantized differential calculus on quantum tori.