报告题目：Dixmier trace formulas and negative eigenvalues of Schroedinger operators on noncommutative tori

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报告摘要：

In this talk, we shall first address a question raised by Alain Connes during a conference at Fudan University in Shanghai in 2017. We will also explain a link that has come to light only recently between noncommutative geometry and the work of Birman-Solomyak on semiclassical analysis of Schroedinger operators in the 70s. We will then present results obtained jointly with Ed McDonald (UNSW-Sydney) on Cwikel-type estimates on NC tori. As an application we obtain a version of Connes' integration formulas under very weak assumptions. Further applications include versions of the Cwikel-Lieb-Rozenblum and Lieb-Thirring inequalities for negative eigenvalues of Schroedinger operators on noncommutative tori. Ultimately, we get a seminclassical Weyl law for curved noncommutative tori, i.e., NC tori endowed with arbitrary Riemannian metrics.