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**Walter D. van Suijlekom\*** ([waltervs@math.ru.nl](mailto:waltervs@math.ru.nl)), Toernooiveld 1, 6525 ED Nijmegen, Netherlands. *Noncommutative tori and the Riemann-Hilbert correspondence.*

In this talk we will consider the interplay between noncommutative tori and noncommutative elliptic curves through a category of equivariant differential modules on  $\mathbb{C}^*$ . We functorially relate this category to the category of holomorphic vector bundles on noncommutative tori as introduced by Polishchuk and Schwarz. In addition, there is a forgetful functor to the category of noncommutative elliptic curves of Soibelman and Vologodsky.

The category that we consider has the nice property of being a Tannakian category, hence it is equivalent to the category of representations of an affine group scheme. Via an equivariant version of the Riemann-Hilbert correspondence we determine this group scheme to be (the algebraic hull of)  $\mathbb{Z}^2$ . (Received July 26, 2007)