INVARIANTS OF q-DEFORMED COMPACT LIE GROUPS

JACEK KRAJCZOK

With every compact (semisimple, simply connected) Lie group G one can associate its q-deformation G_q, where q is a real number between 0 and 1. Such G_q is a compact quantum group - its algebra of functions is no longer commutative. A particular example of this construction gives quantum group $\mathsf{SU_q}(2)$ introduced by Woronowicz. An interesting feature of these quantum groups is that their Haar integrals are not tracial (in other words, quantum groups G_q are not of Kac type). Consequently via Tomita-Takesaki theory, one can introduce additional structure (modular automorphisms, ...) which allows us to define a number of invariants. During the talk I will briefly present the construction of quantum groups G_q and the modular structure for general compact quantum group. In the second part I will present very explicit results concerning computation of invariants for q-deformations. Based on a joint work with Piotr Sołtan.