

СЕМИНАР „АЛГЕБРА И ЛОГИКА”

Драги колеги,

Следващото заседание на семинара ще се проведе
на 21 октомври 2016 г. (петък) от 11:00 часа
в зала 578 на ИМИ – БАН.

Доклад на тема

Transferring differential geometry between representation categories of triangular quasi-Hopf algebras

ще изнесе

Dr Gwen Barnes

(Heriot-Watt University in Edinburgh, UK).

Поканват се всички желаещи.

От секция „Алгебра и логика” на ИМИ – БАН

<http://www.math.bas.bg/algebra/seminarAiL/>

Abstract:

Elements of differential geometry on classical manifolds may be abstracted to fit into the framework of a closed braided monoidal category. The infinitesimal diffeomorphisms on a classical manifold form a Hopf algebra and act on the commutative algebra of functions on the manifold and on sections of vector bundles such as the tangent bundle over the manifold in an equivariant way. Hence these elements of classical differential geometry are representations of a triangular Hopf algebra. A triangular Hopf algebra is a special case of the more general notion of triangular quasi-Hopf algebra, and cochain twists based on quasi-Hopf algebras can be used to transform one quasi-Hopf algebra into another quasi-Hopf algebra. It is a result that the representation categories of cochain twist related quasi-Hopf algebras are equivalent. This is a very convenient mathematical fact which enables one to translate mathematical structures built in one of these representation categories into another one which is related to it by a cochain twist. Happily on the other hand, physical models built out of the tools found in equivalent categories do not in the most general case describe the same physical system since the rules by which the physical models are constructed from the tools differs according to the category. In this talk I will show how to build noncommutative and nonassociative tools of geometry in the representation category of a quasi-Hopf algebra using only intuition from classical differential geometry and the powerful machinery of twist deformation quantisation. This talk is based on joint work with A. Schenkel and R. Szabo arXiv:1409.6331, arXiv:1507.02792.