Seminar/Talk

Deformation Quantization, what is it good for?

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In this talk we demonstrate that the language of deformation quantization and quantum groups are useful for reformulating quantum mechanics in the presence of an electro-magnetic (and gravitomagnetic) potential. In addition, we prove that the reformulation has advantages w.r.t. the functional analytic properties of the Hamilton operator. Furthermore, we prove that the fusion of two conceptual ideas, namely non-commutative differential forms and deformation quantization, allows us to obtain a metric structure in terms of well-known quantum mechanical operators. By relating the deformation parameters to physical constants we are able to obtain the well-known Friedmann-Robertson Walker spacetimes and new spacetimes of this type that are solutions to the Einstein equations.

Friday, October 4, 2019 02:30pm - 03:30pm
Mondi Seminar Room 1, Central Building

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