



Thursday 27th April 2017 at 16:00

Seminar Room “-1” – Department of Mathematics

Gerardo Morsella

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**QUANTUM FIELD THEORY ON DFR
QUANTUM SPACETIME AND PHYSICAL
APPLICATIONS**

ABSTRACT:

As shown by Doplicher, Fredenhagen and Roberts, quantum mechanics and general relativity demand that, in order to have an operationally meaningful notion of localization, spacetime has to be described by a certain noncommutative C^* -algebra, in the spirit of Connes' Noncommutative Geometry. I will review this analysis and the development of QFT on this DFR model of quantum spacetime, which has better UV behavior than the one on commutative spacetime, and I will discuss some recent generalization to curved backgrounds with applications to the horizon problem in cosmology and to the analysis of electromagnetic interactions of neutral matter.

Contact person: Davide Pastorello