UPO UNIVERSITÀ DEL PIEMONTE ORIENTALE

DiSIT DIPARTIMENTO DI SCIENZE E INNOVAZIONE TECNOLOGICA

SEMINARI RICERCA E FORMAZIONE

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ore 16:00-17:00
AULA 204

L-infinity algebras in Quantum Field Theory and gravity

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In this talk we review the recently developed braided L_∞-algebra approach to the construction of noncommutative field theories and gravity. We describe four-dimensional braided Einstein–Cartan gravity and comment on the physical implications of this model. We then introduce an algebraic method for the quantization of noncommutative (NC) field theories based on the Batalin–Vilkovisky (BV) formalism. As an example, we discuss results for a noncommutative scalar quantum field theory on the Moyal space in two different quantization schemes: the standard and the braided BV quantization. The standard BV quantization is based on the underlying (undeformed) L_∞-algebra of the theory; both planar and non-planar diagrams appear and the UV/IR mixing is recovered. In contrast, the braided BV quantization relies on the underlying braided (deformed) L_∞-algebra structure of the theory; in this case non-planar diagrams do not appear and the UV/IR mixing is absent.

Il seminario è promosso dal Prof. Paolo Aschieri

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