Institut Ruđer Bošković
ZAVOD ZA TEORIJSKU FIZIKU
Bijenička c. 54
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SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

(Zajednički seminari Zavoda za teorijsku fiziku,
Zavoda za eksperimentalnu fiziku i Zavoda za teorijsku fiziku PMF-a)

Renormalisability of the matter determinants in noncommutative gauge theory in the enveloping-algebra formalism

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Vrijeme : **15:00 sati c.t.**
Mjesto: IRB, predavaona I krila

Sažetak:

A brief overview of the current situation in the research regarding the renormalisability of noncommutative gauge theories defined by means of Seiberg-Witten maps will be given. Then, the reasons behind the observed renormalisability of the matter contributions to the gauge sector of the effective action, which holds independently of the matter content, will be explained. This will be done by considering a noncommutative gauge theory defined for an arbitrary semisimple gauge group, with Dirac fermionas or complex scalars in an arbitrary representation of the group, and computing the one-loop UV divergent matter contributions to the gauge field effective action to all orders in the noncommutative parameters θ. Surprisingly, it turns out that the UV divergent parts of the matter contributions are proportional to the noncommutative Yang-Mills action where traces are taken over the representation of the matter fields.

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