

Institut Ruđer Bošković  
ZAVOD ZA TEORIJSKU FIZIKU  
Bijenička c. 54  
ZAGREB, HRVATSKA

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## SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

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

# Integrability in string theory and AdS/CFT

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Datum: ponedjeljak, 5. listopada 2015.

Vrijeme : **13:45 sati točno**

Mjesto: IRB, dvorana I krilo

### **Abstract:**

The AdS/CFT correspondence provides an interesting relation between particular gauge and string theories. Its canonical example is the duality between string theory in AdS<sub>5</sub>×S<sup>5</sup> and four dimensional N=4 supersymmetric Yang-Mills theory. As it turns out, the string in AdS<sub>5</sub>×S<sup>5</sup> is special (integrable), which makes it possible to nonperturbatively compute observables in supersymmetric Yang-Mills theory in the so-called planar limit. I will explain what integrability is, how it can be used to describe the string, and how this gives results in supersymmetric Yang-Mills theory. Building on this, I will describe deformations of the string on AdS<sub>5</sub>×S<sup>5</sup> that are constructed to preserve its integrability, and explain that the corresponding deformation of supersymmetric Yang-Mills theory lies in the realm of noncommutative field theory, including noncommutativity of kappa-Minkowski type. Time permitting, I will also deform the string in Minkowski space to realize kappa-Poincar symmetry, which will turn out to relate to earlier parts of my talk in an interesting way.

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