

# SEMPARIS – Séminaires en région parisienne

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## Séminaire de physique mathématique

**Vendredi 21 Avril 2017, 14 :15**

IPHT, Pièce 35, Bât. 774

Domaines : math-ph

Titre : *New critical phenomena in the constrained random networks*

Orateur : **Alexander Gorsky** ( IITP, Moscow )

Résumé : *We discuss new phenomena in the Erdos-Renyi networks supplemented by the degree conservation constraint and in regular random graphs. The key tool is the analysis of spectral properties of adjacency and Laplacian matrices in particular the phenomena of eigenvalue tunneling. When the chemical potential for the triangles is introduced the networks undergo the complete defragmentation into the maximally possible number of cliques generalizing the Strauss phase. If the chemical potentials for the unicolor trimers are introduced in the multicolor constrained networks it turns out that they are absolutely unstable with respect to fragmentation into the weakly coupled multilayer networks. The phenomena of the finite plateau formation for the network spectral gap occurs at some interval of chemical potentials for trimers. The localization-delocalization transition in the constrained networks will be explained.*

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