

# SEMPARIS – Séminaires en région parisienne

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## Séminaire du Laboratoire de Physique Théorique de la Matière Condensée

**Lundi 14 Décembre 2020, 16 :00**

LPTMC, On-line zoom seminar( <https://zoom.us/j/96903025813> ID de réunion : 969 0302 5813 Code secret : 007425 )

Domaines : cond-mat.mes-hall

Titre : *High-order renormalized perturbative approach for strongly-correlated fermions*

Orateur : **Riccardo Rossi** ( **Simons Foundation, Flatiron, New-York** )

Résumé : *In this talk I show how perturbation theory can be turned into a viable computational approach for physical systems afflicted by the fermionic sign problem. This is accomplished by designing new numerical approaches to reach arbitrary-high orders for the bare [1] and the renormalized [2] expansion. I discuss the results obtained for the doped square-lattice Hubbard model in the pseudogap regime, and in frustrated lattices. Finally, I present the first unbiased diagrammatic computation in a broken-symmetry phase by discussing the s-wave superfluid transition in the spin-polarized cubic-lattice attractive Hubbard model.*

[1] RR, *PRL* 119, 045701 (2017) [2] RR, Simkovic, Ferrero, *EPL* 132, 11001 (2020)

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