Contribution ID: **2** Type: **Scheduled Talks**

Observables and gauge covariant renormalisation of stochastic 3D Yang-Mills

Monday, July 28, 2025 11:00 AM (1 hour)

In this talk, I will describe a family of observables for 3D quantum Yang-Mills theory based on regularising connections with the YM heat flow. I will describe how these observables can be used to show that there is a unique renormalisation of the stochastic quantisation equation of YM in 3D that preserves gauge symmetries, which complements a recent result on the existence of such renormalisations. Our analysis is based on short time expansions of SPDEs and of regularised Wilson loops, and requires a careful balance between the running time of the dynamic and the regularisation parameter coming from the YM heat flow.
Based on joint work with Hao Shen.

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