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Connecting XX Spin Chain to Kinetically Constrained PXP Model via Lattice Gauge Theory: anomalous transport and fluctuations

Tuesday 6 May 2025 15:15 (30 minutes)

I will present a mapping that transforms the kinetically constrained PXP model into a constrained XX model with non-local constraints. The constraint can be tuned to interpolate between the free fermionic XX model at one end and the PXP model at the other. This transformation reveals additional conservation laws that help explain some of the unusual properties of the model. Finally, I will also present some results about the impact of disorder in such constrained systems and, in particular, how the constraints influence localization.

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