Quantum formalism for systems with temporally varying discretization

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A canonical quantum formalism for discrete systems subject to a discretization changing dynamics is outlined. This framework enables one to systematically study (non-)unitarity of such dynamics, the role of canonical constraints and the fate of Dirac observables on temporally varying discretizations. It will be illustrated how the formalism can also be employed to generate a vacuum for a scalar field on an evolving lattice. Implications for the dynamics in simplicial quantum gravity models are commented on.

References

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