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Generative Flow Networks in Spin Foam Cosmology

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Spin foams arose as the covariant (path integral) formulation of quantum gravity depicting transition amplitudes between different quantum geometry states. Though a lot of progress has been made in defining the underlying mathematics, actually calculating the corresponding amplitudes is still a challenging topic, especially for more complicated, thus more physically-relevant cases. Following recent advances, where stochastic algorithms (Markov Chain Monte Carlo-MCMC) were used, we employ "Generative Flow Networks", a newly developed machine learning algorithm to compute the expectation value of the dihedral angle for a 4-simplex and compare the results with previous works.

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