

Abstract Submitted
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The Newtonian approximation in Causal Dynamical Triangulations ADAM GETCHELL, Univ of California - Davis — I review how to derive Newton's law of universal gravitation from the Weyl strut between two Chazy-Curzon particles. I also briefly review Causal Dynamical Triangulations (CDT), a method for evaluating the path integral from canonical quantum gravity using Regge calculus and restrictions of the class of simplicial manifolds evaluated to those with a defined time foliation, thus enforcing a causal structure. I then discuss how to apply this approach to Causal Dynamical Triangulations, in particular modifying the algorithm to keep two simplicial submanifolds with curvature (i.e. mass) a fixed distance from each other, modulo regularized deviations and across all time slices. I then discuss how to determine if CDT produces an equivalent Weyl strut, which can then be used to obtain the Newtonian limit. I wrap up with a brief discussion of computational methods and code development.

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